

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 13, 2005, 15:29:11 ; Search time 93 Seconds
(without alignments)

4366.468 Million cell updates/sec

Title: US-10-053-758-225

Perfect score: 5961

Sequence: 1 MPRAPRCRAVSLRLSHRYRE.....TALEAAANPALPSPDFKTIILD 1132

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A_Geneseq_23Sep04:*

1: Geneseqp1990s:*

2: Geneseqp1990s:*

3: Geneseqp2000s:*

4: Geneseqp2001s:*

5: Geneseqp2002s:*

6: Geneseqp2003as:*

7: Geneseqp2003bs:*

8: Geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	5961	100.0	1132	2	AAW46957 Human tel
2	5961	100.0	1132	2	AAW90251 Human cat
3	5961	100.0	1132	2	AAW28881 Human tel
4	5961	100.0	1132	2	AAW32090 Human tel
5	5961	100.0	1132	2	AAW43621 A human t
6	5961	100.0	1132	2	AAW26580 Human tel
7	5961	100.0	1132	4	AAW64859 Heart mus
8	5961	100.0	1132	4	AAW64329 Human pro
9	5961	100.0	1132	4	AAW99930 Human tel
10	5961	100.0	1132	4	AAW82765 Human tel
11	5961	100.0	1132	5	AAW29226 Human tel
12	5961	100.0	1132	5	AAW72735 Human tel
13	5961	100.0	1132	6	AAW42384 Human tel
14	5961	100.0	1132	6	AAW42063 Human tel
15	5961	100.0	1132	6	AAW56676 Human tel
16	5961	100.0	1132	6	AAW58045 Human tel
17	5961	100.0	1132	7	AAW21420 Human TER
18	5961	100.0	1132	7	AAW72743 Human pro
19	5961	100.0	1132	8	AAW70114 hTERT pro
20	5961	100.0	1132	8	AAW90599 Human TER
21	5961	100.0	1132	8	AAW182172 Human tel
22	5961	100.0	1154	2	AAW61350 Human tel
23	5961	100.0	1189	2	AAW47008 Glutathio
24	5955	99.9	1285	2	AAW47000 HIS tagge
25	5954	99.9	1132	2	AAW71376 Human tel

26	5954	99.9	1132	2	AAW00627 Human tel
27	5954	99.9	1132	2	AAW00638 Truncated
28	5954	99.9	1132	2	AAW28401 Human EST
29	5954	99.9	1132	3	AAW96566 hEST2, a
30	5954	99.9	1132	7	AAW47061 Human TER
31	5954	99.9	1132	7	AAW40482 Human tel
32	5952	99.8	1132	2	AAW56113 Human tel
33	5927	99.4	1166	2	AAW00647 Telomeras
34	5918	99.3	1405	2	AAW56101 Enhanced
35	5911.5	99.2	1199	2	AAW47007 Glutathio
36	5882	98.7	1120	2	AAW00641 Telomeras
37	5873	98.5	1120	2	AAW00650 Telomeras
38	5721	96.0	1150	2	AAW47006 Glutathio
39	5555	93.2	1053	2	AAW00640 Altered C
40	5516	92.5	1093	2	AAW00649 Altered C
41	5467	91.7	1041	2	AAW00652 Altered C
42	5467	91.7	1041	2	AAW00643 Altered C
43	5008	84.0	948	2	AAW00639 N-termina
44	5004	83.9	948	2	AAW00648 Truncated
45	4932	82.7	936	2	AAW00642 Truncated

ALIGNMENTS

RESULT 1
AAW46957
ID AAW46957 standard; protein; 1132 AA.
AC AAW46957;
XX
XX
DT 13-AUG-1998 (first entry)
XX
DE Human telomerase reverse transcriptase.
XX
KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis; cell proliferation; cancer; ageing; ribonucleoprotein.
XX
XX Homo sapiens.
XX
PN GB2317891-A.
XX
PD 08-APR-1998.
XX
PF 01-OCT-1997; 97GB-00020890.
XX
PR 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
(GERO-) GERON CORP.
(UYTB-) UNIV TECHNOLOGY CORP.
Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB; Andrews WH;
WPI; 1998-171633/16.
N-PSDB; AAV22379.
XX
PT Pure and recombinant human Telomerase Reverse Transcriptase and its variants - are useful in the diagnosis, prognosis and treatment of cell proliferation conditions especially cancer and ageing.
XX
PS Claim 3; Fig 17; 387pp; English.
XX
CC The present sequence represents human telomerase reverse transcriptase (hTERT), which is a ribonucleoprotein. The present invention also describes the following methods: (A) determining whether a test compound

is a modulator of hTERT, by detecting the change in hTERT recombinant protein or polynucleotide, on administration of the compound; (B) preparation of recombinant telomerase by contacting a protein preparation of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or protein in a sample by binding a relevant probe to the sample and detecting the complex formed or in the case of RNA detection, amplifying the product and correlating the presence of complex or amplification product with presence of hTERT in the sample; and (D) increasing the proliferation of a vertebrate cell by increasing hTERT expression; and (E) the use of an agent that causes an increase in cell vertebrate cell proliferation to create a medicament that inhibits ageing. A protein preparation of hTERT and the polynucleotide encoding hTERT can be used in the manufacture of medicaments for inhibiting the effect of ageing or cancer. Inhibitors of telomerase activity can be used to treat conditions that are associated with high telomerase activity. A protein preparation of hTERT can also be used in the new methods

Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1132;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRLGPGQWRLVQRGDPAAFRALVAQCLVCVW 60
 DB 1 MPAPRCRAVRSLLRSHYREVLPATFVRLGPGQWRLVQRGDPAAFRALVAQCLVCVW 60

QY 61 DARPPPAAPSPROVSCLEKELVARVQLRCLCERGAKNVLAAGFALLDGAAGPPEAFTTSVR 120
 DB 61 DARPPPAAPSPROVSCLEKELVARVQLRCLCERGAKNVLAAGFALLDGAAGPPEAFTTSVR 120

QY 121 SYLPTNTVDALRGSGANGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 180
 DB 121 SYLPTNTVDALRGSGANGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 180

QY 181 ATQARPPPHASGRRRLGCBRAWNHSVREAGVPLGLPAPGARRRGSASRSPLPKRPRR 240
 DB 181 ATQARPPPHASGRRRLGCBRAWNHSVREAGVPLGLPAPGARRRGSASRSPLPKRPRR 240

QY 241 GAAPEPERTVPGGSAHAPGRTGSDRGFCVUSPARPAEATSLGALSGTRHSHPSVG 300
 DB 241 GAAPEPERTVPGGSAHAPGRTGSDRGFCVUSPARPAEATSLGALSGTRHSHPSVG 300

QY 301 RQHAGPPSTSRPRPMDTPCPVYAEKHFYSSGDKQLRPSFLLSLRSLTGARLL 360
 DB 301 RQHAGPPSTSRPRPMDTPCPVYAEKHFYSSGDKQLRPSFLLSLRSLTGARLL 360

QY 361 VETIFLGSRPWPGTTPRRLPRLPQRYQWRPPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
 DB 361 VETIFLGSRPWPGTTPRRLPRLPQRYQWRPPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420

QY 421 PAAGVCAREKPGQSAAPBEEDTPRLVQLLRQHSHPQVYGFVPACLRLVPPQLWGS 480
 DB 421 PAAGVCAREKPGQSAAPBEEDTPRLVQLLRQHSHPQVYGFVPACLRLVPPQLWGS 480

QY 481 RHNERFLRNTKFFISLKGHAKLSLOELTWKMSVRDCAWLRRSPGVGCPAAEHLRREI 540
 DB 481 RHNERFLRNTKFFISLKGHAKLSLOELTWKMSVRDCAWLRRSPGVGCPAAEHLRREI 540

QY 541 LAKFLHLMVSVYVELLRFYVETTFQKNRLFFYRKSVWSKLOSIGIRQHLKRVQURE 600
 DB 541 LAKFLHLMVSVYVELLRFYVETTFQKNRLFFYRKSVWSKLOSIGIRQHLKRVQURE 600

QY 601 LSAEVRQREARPAALLTSRLRFIPKPDGLRPTVNMVYVVGARTPRREKRAELRSRYKA 660
 DB 601 LSAEVRQREARPAALLTSRLRFIPKPDGLRPTVNMVYVVGARTPRREKRAELRSRYKA 660

QY 661 LFSVLNYERARRPGLLAGSVLGLDDIHRARWTFVLVRVRAQDPPPELYFKVDVTGAYDTI 720
 DB 661 LFSVLNYERARRPGLLAGSVLGLDDIHRARWTFVLVRVRAQDPPPELYFKVDVTGAYDTI 720

QY 721 PDRLTEVIAIIPKQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780

DB 721 PDRLTEVIAIIPKQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
 QY 781 QETSPLRDAVWTEQSSSLNEASSGLFDVFLRFMCHHAVIRKSVYVQCGIPQGSILSTL 840
 DB 781 QETSPLRDAVWTEQSSSLNEASSGLFDVFLRFMCHHAVIRKSVYVQCGIPQGSILSTL 840
 QY 841 LCSLCYGDMEKLPAGIRRDGILLRLVDDFLAVTTPHLTHAKTFLRLTVRGVPEYGCVNL 900
 DB 841 LCSLCYGDMEKLPAGIRRDGILLRLVDDFLAVTTPHLTHAKTFLRLTVRGVPEYGCVNL 900
 QY 901 RKTVNVFPVEDALGTAFAVQMPAHGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTF 960
 DB 901 RKTVNVFPVEDALGTAFAVQMPAHGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTF 960
 QY 961 NRGFKAGRNMRKLFGLVRLKCHSLFLOLVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020
 DB 961 NRGFKAGRNMRKLFGLVRLKCHSLFLOLVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020
 QY 1021 FHOQVWKNPFPFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQMLCHQAFLL 1080
 DB 1021 FHOQVWKNPFPFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQMLCHQAFLL 1080
 QY 1081 KLTRHRVTYVPLGLSLRTAQTSLSKLPFGTTTLTALEAAANPALPSDFKTILD 1132
 DB 1081 KLTRHRVTYVPLGLSLRTAQTSLSKLPFGTTTLTALEAAANPALPSDFKTILD 1132

RESULT 2
 ID AAW90251 standard; protein; 1132 AA.
 AC AAW90251;
 XX 24-MAY-1999 (first entry)
 DE Human catalytic telomerase sub-unit protein.
 KW Human: catalytic telomerase subunit; therapy; diagnosis; hTC; assay;
 KW modulator; treatment; inhibit; cellular disorder; death; defect; cancer;
 KW ageing; antisense; neoplastic cell; telomerase-related condition;
 KW tumour cell.
 OS Homo sapiens.
 PN WO9859040-A2.
 PD 30-DEC-1998.
 PF 09-JUN-1998; 98WO-EP003468.
 PR 20-JUN-1997; 97DE-01026329.
 PR 26-MAR-1998; 98DE-01013274.
 PR 14-APR-1998; 98DE-01016496.
 PA (FARB) BAYER AG.
 PI Hagen G, Siegmund H, Weichel W, Wick M, Zubov D;
 XX WPI; 1999-081276/07.
 DR N-PSDB; AAV72117.
 XX New catalytically active subunit of human telomerase - used in the
 PT modulation of telomerase activity, particularly for treating cancer and
 PT ageing.
 XX Claim 2; Fig 2; 76pp; German.
 PS This sequence represents a novel human catalytic telomerase sub-unit
 CC (hTC). This protein can be used in screening assays to identify
 CC modulators of telomerase and to treat or inhibit cellular disorders,
 CC death, defects and/or other pathological processes involving telomerase,
 CC particularly cancer and ageing (also suitable for this are agents that
 CC stimulate, inhibit or mimic the activity of the subunit). Antisense

CC nucleic acids inhibit telomerase action (by binding to specific mRNA),
CC particularly in neoplastic cells and may be expressed in vivo. Antibodies
CC and fragments of the protein, used as probes or primers, are used to
CC diagnose telomerase-related conditions (especially neoplasia) by (i)
CC detecting abnormal levels of the subunit protein in body fluids or
CC tissues or (ii) by measuring the amount of the encoding nucleic acid.
CC Expression of the nucleic acid encoding the subunit mRNA is confined to
CC tumour cells, in contrast to the ubiquitous expression of the telomerase
CC RNA subunit
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRVRSLLRSHYREVLPLATEFVRLGPGQWRLVORGDPAPAFRALVAOCLVCVPW 60
DB 1 MPRAPCRVRSLLRSHYREVLPLATEFVRLGPGQWRLVORGDPAPAFRALVAOCLVCVPW 60

QY 61 DARPPPAAPSFROVSCIKELVARVLQRLCERGAQNVLAFGFALLDGGARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFROVSCIKELVARVLQRLCERGAQNVLAFGFALLDGGARGGPPPEAFTTSVR 120

QY 121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYLQGA 180
DB 121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYLQGA 180

QY 181 ATOARPPPHASGRRRLGCRANVHSVREAGVPLGLPAPGARRRGGASRSLLPDKPRR 240
DB 181 ATOARPPPHASGRRRLGCRANVHSVREAGVPLGLPAPGARRRGGASRSLLPDKPRR 240

QY 241 GAAPERPRTVPGQSWAHPCRTGPGSDRGFCVSPARPABEATSLEGALSGTRHSPSVG 300
DB 241 GAAPERPRTVPGQSWAHPCRTGPGSDRGFCVSPARPABEATSLEGALSGTRHSPSVG 300

QY 301 RQHAGPPSTSRPPRMDTCCPVYATKHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
DB 301 RQHAGPPSTSRPPRMDTCCPVYATKHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360

QY 361 VETIFLGSRRPMTGTPRRLPRLQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLAAVT 420
DB 361 VETIFLGSRRPMTGTPRRLPRLQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLAAVT 420

QY 421 PAAGVCAREKPGQSWAAPBEEDTPRRLVOLLRQHSPPMOVYGFVRACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSWAAPBEEDTPRRLVOLLRQHSPPMOVYGFVRACLRRLVPPGLWGS 480

QY 481 RHNERPLRNTKKPISLGKHAKLSLQELTWKMSVRDCAWLRSSPGVCPVPAAEHRLREEI 540
DB 481 RHNERPLRNTKKPISLGKHAKLSLQELTWKMSVRDCAWLRSSPGVCPVPAAEHRLREEI 540

QY 541 LAKFLHWSVYVVELLRSFFYTETTFQKNRLFFYRKSWSKLQSIGIRQHUKRVOLRE 600
DB 541 LAKFLHWSVYVVELLRSFFYTETTFQKNRLFFYRKSWSKLQSIGIRQHUKRVOLRE 600

QY 601 LSAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVGARTERREKAEALTSRVKA 660
DB 601 LSAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVGARTERREKAEALTSRVKA 660

QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PQRLTEVIASIIKPONTYCVRYAVVQKAHGHVRKAFKSHVSTLTDLQPNRQFVAHL 780
DB 721 PQRLTEVIASIIKPONTYCVRYAVVQKAHGHVRKAFKSHVSTLTDLQPNRQFVAHL 780

QY 781 QETSPLRDVAVIQQSSSLNEASSGLFDVLFRCFCHAVRIRGKSYVQCQIGIPGGSILSTL 840
DB 781 QETSPLRDVAVIQQSSSLNEASSGLFDVLFRCFCHAVRIRGKSYVQCQIGIPGGSILSTL 840

QY 841 LCSLCYGDMEKLFAGIRRDGLLRLVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900

DB 841 LCSLCYGDMEKLFAGIRRDGLLRLVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
QY 901 RKTVVNPFVEDEALGGTAFVQMPAHGLFPMCGLLDTRTLEVDSDSYSSYARTSIRASLTF 960
DB 901 RKTVVNPFVEDEALGGTAFVQMPAHGLFPMCGLLDTRTLEVDSDSYSSYARTSIRASLTF 960
QY 961 NRGFKAGRNMRRKLFGLRLKCHSLFLDLQVNSLQTVCTNIYKILLIQAAYRFHACVLQLP 1020
DB 961 NRGFKAGRNMRRKLFGLRLKCHSLFLDLQVNSLQTVCTNIYKILLIQAAYRFHACVLQLP 1020

QY 1021 FHQVWKNPTFFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080
DB 1021 FHQVWKNPTFFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080

QY 1081 KLTRHRVTVYVPLGSLRTAQTLRSRLPGTTLTALEAAANPALPSDFKTILD 1132
DB 1081 KLTRHRVTVYVPLGSLRTAQTLRSRLPGTTLTALEAAANPALPSDFKTILD 1132

RESULT 3
AA28881
ID AAY28881 standard; protein; 1132 AA.
XX
AC AAY28881;
XX AC
XX XX
DT 17-JAN-2000 (first entry)
XX
DE Human telomerase reverse transcriptase protein.
XX
KW Human telomerase reverse transcriptase protein; hTERT; telomerase; hEST2;
KW catalytic protein component; cell proliferative capacity; DNA primer;
KW telomerase substrate; telomeric DNA synthesis; cell immortality;
KW neoplastic phenotype; diagnostic application; prognostic application;
KW telomerase related condition; cancer; therapeutic agent;
KW telomerase expression; telomerase activity.
XX
OS Homo sapiens.
XX
XX
FH Key Location/Qualifiers
FT Misc-difference 608 /note= "Corresponds to cac codon"
FT
XX
PN WO950279-A1.
XX
PD 07-OCT-1999.
XX
PF 31-MAR-1999; 99WO-US007160.
XX
PR 31-MAR-1998; 98US-00052919.
XX
PA (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX
PI Cecch TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
XX Andrews WH;
XX WPI; 1999-610834/52.
DR N-PSDB; AA208150.
XX
PT Antisense polynucleotides for human telomerase reverse transcriptase used
PT for diagnosing or treating cancer.
XX
PS Claim 2; Fig 2; 31pp; English.
XX
CC The present sequence is human telomerase reverse transcriptase protein.
CC This is the catalytic protein component of telomerase and is also
CC referred to as hEST2. hTERT has the ability to extend a DNA primer that
CC functions as a telomerase substrate for telomeric DNA synthesis. This
CC correlates with cell proliferative capacity, cell immortality, and the
CC development of a neoplastic phenotype. Human TRT antisense
CC oligonucleotides are useful for diagnostic or prognostic applications to
CC telomerase related conditions, including cancer. They are also useful as

CC therapeutic agents, for inhibition of telomerase expression and activity
XX Sequence 1132 AA;
SQ

Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRAVRSLSRSHYREVLPLATFVRRLGPGQWRLVORGDPAAAFRALVAQCLVCPW 60
DB 1 MPRAPCRAVRSLSRSHYREVLPLATFVRRLGPGQWRLVORGDPAAAFRALVAQCLVCPW 60
QY 61 DARPPPAAPSRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSGAGLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 121 SYLPTNTVDALRGSGAGLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLRCERAMNHSVREAGVPLGLPAGARRGGASRLPLPKPRR 240
DB 181 ATQARPPPHASGPRRLRCERAMNHSVREAGVPLGLPAGARRGGASRLPLPKPRR 240
QY 241 GAAPPERTPVQGSWAHPGTRGSDRGFCWSPARPAEATSEALSGSTRHSPSVG 300
DB 241 GAAPPERTPVQGSWAHPGTRGSDRGFCWSPARPAEATSEALSGSTRHSPSVG 300
QY 301 ROHAGAPPSRPPRPNDTPCPVYAEKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
DB 301 ROHAGAPPSRPPRPNDTPCPVYAEKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELGNHAQCPYGVLLKTHCPLRAAVT 420
DB 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRRLVQLLRQHSPPWQVYGFVRACLRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEDTDPRRLVQLLRQHSPPWQVYGFVRACLRLVPPGLWGS 480
QY 481 RHNERRLNTKFIISLGHAKLSLOELTWKMSVRDCAMLRSPGVCVPAABHRLREI 540
DB 481 RHNERRLNTKFIISLGHAKLSLOELTWKMSVRDCAMLRSPGVCVPAABHRLREI 540
QY 541 LAKFLHLMMSVYVVELLSRFPYVTTTFOKNRFFYRKSVWSKLSQIGIRQHLKRVQRE 600
DB 541 LAKFLHLMMSVYVVELLSRFPYVTTTFOKNRFFYRKSVWSKLSQIGIRQHLKRVQRE 600
QY 601 LSAEVRQREARPAALLTSRLRIPKPDGLRPVNNMDYVVGARTFRREKRAERLTSRVKA 660
DB 601 LSAEVRQREARPAALLTSRLRIPKPDGLRPVNNMDYVVGARTFRREKRAERLTSRVKA 660
QY 661 LFSVLNERARRPGLLGASVLGLDDTHRAWRFTVLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNERARRPGLLGASVLGLDDTHRAWRFTVLVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PQDLTEVIASTIKPQNTYCVRYAVVQAAGHVKAFKSHVSTLTDIQTMRQFVAHL 780
DB 721 PQDLTEVIASTIKPQNTYCVRYAVVQAAGHVKAFKSHVSTLTDIQTMRQFVAHL 780
QY 781 QETSPLRDVAVIEQSSSLEASGLPDVFLRPMCHHAVIRKSVYQCGIPQGSILSTL 840
DB 781 QETSPLRDVAVIEQSSSLEASGLPDVFLRPMCHHAVIRKSVYQCGIPQGSILSTL 840
QY 841 LCSLCYGDMMENKLFAGIRDGGLLRVDDFLVTHLTHAKTFLRLTVRGVPEYGCNVNL 900
DB 841 LCSLCYGDMMENKLFAGIRDGGLLRVDDFLVTHLTHAKTFLRLTVRGVPEYGCNVNL 900
QY 901 RKTUVNFPVEDEALGTAFOVQMPAGHLFPWCGLLDDTRTFLEVQSDYSYASTRSALTFF 960
DB 901 RKTUVNFPVEDEALGTAFOVQMPAGHLFPWCGLLDDTRTFLEVQSDYSYASTRSALTFF 960
QY 961 NRGFKAGRNMRKLFVLRLLKCHSLFDLDQVNSLQVCTVNIYKILLQAYRFHACVLQLP 1020

DB 961 NRGFKAGRNMRKLFVLRLLKCHSLFDLDQVNSLQVCTVNIYKILLQAYRFHACVLQLP 1020
QY 1021 FHOQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHOAFTLL 1080
DB 1021 FHOQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHOAFTLL 1080
QY 1081 KLTRHRVTYVPLGLSLRTAQTLQSRKLPOTTLTALAANAANPALPSDFKTLTD 1132
DB 1081 KLTRHRVTYVPLGLSLRTAQTLQSRKLPOTTLTALAANAANPALPSDFKTLTD 1132

RESULT 4

AAY32090
ID AAY32090 standard; protein; 1132 AA.

XX AAY32090;

XX AC

XX DT 17-JAN-2000 (first entry)

XX Human telomerase reverse transcriptase (hTERT).

XX Telomerase reverse transcriptase; human; hTERT; cell proliferation;
cancer.

XX OS Homo sapiens.

XX PN WO950386-A2.

XX PD 07-OCT-1999.

XX PF 31-MAR-1999; 99WO-US007097.

XX PR 31-MAR-1998; 98US-00052864.

XX PR 03-AUG-1998; 98US-00128354.

XX PA (GERO-) GERON CORP.

XX PI Morin GB;

XX DR WPI; 1999-610842/52.

XX DR N-PSDB; AAZ20279.

XX PT New catalytic polypeptide and polynucleotide, useful for increasing
catalytic activity in a cell.
PS Claim 13; Fig 1; 24pp; English.

XX The present sequence represents human telomerase reverse transcriptase
(hTERT). Human telomerase is a target for diagnosing and treating diseases
relating to cell proliferation and senescence, such as cancer, or for
increasing the proliferative capacity of a cell. A claimed method for
increasing the proliferative capacity of a vertebrate cell, especially a
human or other mammalian cell, involves introducing into the cell a
recombinant hTERT polynucleotide encoding an hTERT variant in which
residues 192-323, 200-323, 192-271, 200-271, 222-240, 415-450, 192-323
and 415-450, or 192-271 and 415-450 of the present sequence are deleted.
A claimed method of preparing recombinant telomerase involves contacting
a recombinant hTERT deletion mutant (as above) with a telomerase RNA
component such that the 2 proteins associate to form a complex capable of
catalysing the addition of nucleotides to a telomerase substrate. A
claimed method for reducing telomerase activity in a cell involves
introducing a recombinant polynucleotide encoding an hTERT variant having
a deletion of amino acids 192-450, 560-565, 637-660, 748-764 or
1055-1071 of the present sequence

SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRAVRSLSRSHYREVLPLATFVRRLGPGQWRLVORGDPAAAFRALVAQCLVCPW 60

Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVORGDPAAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFROVSCLELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
Db 61 DARPPPAAPSFROVSCLELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSGAWGALLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLPTNTVDALRGSGAWGALLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGCARRRGGSASRLPLKRP 240
Db 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGCARRRGGSASRLPLKRP 240
QY 241 GAAPERPTVPGQSWAHPORTGSDRGFCVVSAPARPAEATSLGALSCTRHSPSVG 300
Db 241 GAAPERPTVPGQSWAHPORTGSDRGFCVVSAPARPAEATSLGALSCTRHSPSVG 300
QY 301 ROHAGPPSTSRPPRMDTPCPVYAETHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
Db 301 ROHAGPPSTSRPPRMDTPCPVYAETHFLYSSGDKQELRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRRPMDTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRRPMDTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSVAAPBEEDTPRRLVOLLRHSSPMOVYGFVRACLRLRVPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPBEEDTPRRLVOLLRHSSPMOVYGFVRACLRLRVPGLWGS 480
QY 481 RHNERFLRNTKXIFSLGKHAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERFLRNTKXIFSLGKHAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
QY 541 LAKFLHWSVYVVELLRSPFYTTETFOKNRLFYRKSWKLSQSIGIRHQLKRVOLRE 600
Db 541 LAKFLHWSVYVVELLRSPFYTTETFOKNRLFYRKSWKLSQSIGIRHQLKRVOLRE 600
QY 601 LSAEVRQREARPAALLTSRLRIPKPDGLRPIVNMNDYVVGARTFRREKRAELTSRVKA 660
Db 601 LSAEVRQREARPAALLTSRLRIPKPDGLRPIVNMNDYVVGARTFRREKRAELTSRVKA 660
QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL 780
Db 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL 780
QY 781 QETSPLRDADVIRQSSSLNEASSGLPDLVFLRCHHRAVIRGKSYVQCQIGIPGSSILSTL 840
Db 781 QETSPLRDADVIRQSSSLNEASSGLPDLVFLRCHHRAVIRGKSYVQCQIGIPGSSILSTL 840
QY 841 LCSLCYGDMEKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRLVIRGVPYGCVVNL 900
Db 841 LCSLCYGDMEKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRLVIRGVPYGCVVNL 900
QY 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLTDTRTLEVQSDYSYVARTSIRASLTF 960
Db 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLTDTRTLEVQSDYSYVARTSIRASLTF 960
QY 961 NRGFKAGNRWRKLFVLRKCHSLFDLQVNSLQVCTNIYKILLQAYRHACVLOLP 1020
Db 961 NRGFKAGNRWRKLFVLRKCHSLFDLQVNSLQVCTNIYKILLQAYRHACVLOLP 1020
QY 1021 FHOQWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFL 1080
Db 1021 FHOQWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFL 1080
QY 1081 KLTRHRTVTVPLLGSLRTAQQLSRKLPCTTLTALEAAANPALPSPDKTILD 1132

Db 1081 KLTRHRTVTVPLLGSLRTAQQLSRKLPCTTLTALEAAANPALPSPDKTILD 1132
RESULT 5
AAV43621
ID AAY43621 standard; protein; 1132 AA.
XX AAY43621;
AC AAY43621;
DT 26-JAN-2000 (first entry)
DE A human telomerase reverse transcriptase (TRT) polypeptide.
XX Human; telomerase reverse transcriptase; TRF; T lymphocyte activation;
KW dendritic cell; telomerase activity; cancer cell; proliferating cell;
KW immunological destruction; telomerase; cancer; proliferation disease.
XX Homo sapiens.
OS
XX MO9950392-A1.
XX 07-OCT-1999.
XX 30-MAR-1999; 99WO-US006898.
XX 31-MAR-1998; 98US-0112006P.
XX (GERO-) GERON CORP.
XX Gaeta FCA;
XX WPI; 1999-610845/52.
DR N-PSDB; AA230154.
XX Eliciting an in vivo immune response for prevention and treatment of
PT cancers.
XX Claim 3; Fig 1; 26pp; English.
XX The present sequence represents a human telomerase reverse transcriptase
(TRT) polypeptide. The protein is used in the method of the invention.
CC The specification describes a method for activating a T lymphocyte,
CC comprising contacting the T lymphocyte with a dendritic cell that
CC expresses a TRT peptide in the context of a MHC class I or MHC class II
CC molecule. The protein causes induction of an in vivo immunological
CC response to telomerase activity. Cancer cells are characterized by
CC expression of endogenous TRT gene and the presence of detectable
CC telomerase activity. Therefore, by eliciting a specific immune response
CC to TRT or to TRT-expressing cells, it is possible to selectively target
CC proliferating cells for immunological destruction. The method is used for
CC eliciting an in vivo immune response to telomerase by activating a T
CC lymphocyte, and is useful for prevention and treatment of cancers and
CC other proliferation diseases/conditions
XX
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVORGDPAAAFRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVORGDPAAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFROVSCLELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
Db 61 DARPPPAAPSFROVSCLELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSGAWGALLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLPTNTVDALRGSGAWGALLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAGCARRRGGSASRLPLKRP 240

Db 181 ATQARPPHAGSPRRRLGCRAMNHSVREAGVPLGLPAPGARRGGASRSLPLPKPRR 240
Qy 241 GAAPERPPTVGGGWAHPGRTGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300
Db 241 GAAPERPPTVGGGWAHPGRTGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300
Qy 301 ROHHAGPPSTRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSLRPSLTGARRL 360
Db 301 ROHHAGPPSTRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSLRPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTPRRLVQLLRQHSPPWQVYFVRACLRLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPPEEDTPRRLVQLLRQHSPPWQVYFVRACLRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKKFISLGKIAKLSLOBLTWKMSVRDCAWLRSPGVGCVPAAEHRLREI 540
Db 481 RHNERRFLRNTKKFISLGKIAKLSLOBLTWKMSVRDCAWLRSPGVGCVPAAEHRLREI 540
Qy 541 LAKFLHLMVSVYVVELLSRFFYTETTFQKNRLFYFKKSVWSKLQSIGIRQHLKRVOLRE 600
Db 541 LAKFLHLMVSVYVVELLSRFFYTETTFQKNRLFYFKKSVWSKLQSIGIRQHLKRVOLRE 600
Qy 601 LSAEVRQHREARPAALLTSRLRIFPKDGLRPVNMVDYVVGARTFRREKRAELTSRVKA 660
Db 601 LSAEVRQHREARPAALLTSRLRIFPKDGLRPVNMVDYVVGARTFRREKRAELTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGDDIHRAMRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGDDIHRAMRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
Qy 721 PQDRLTEVIASIIKPONTYCVRYAVVQAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PQDRLTEVIASIIKPONTYCVRYAVVQAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Qy 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYOCOGIPQGSILSTL 840
Db 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYOCOGIPQGSILSTL 840
Qy 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVNL 900
Db 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLTVRGVPEYGCVNL 900
Qy 901 RKTVMNFPVEDEALGTAFOVMPAHGLFPWCGLLDTRTLEVQSDYSSYARTSIRASLTF 960
Db 901 RKTVMNFPVEDEALGTAFOVMPAHGLFPWCGLLDTRTLEVQSDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGRNMRRLFGVLRKCHSLFDLDQVNSLQVCTNIYKILLLOAYRFHACVLQLP 1020
Db 961 NRGFKAGRNMRRLFGVLRKCHSLFDLDQVNSLQVCTNIYKILLLOAYRFHACVLQLP 1020
Qy 1021 FHOQVWKNPTFFLRVISTDASLCYSILKAKNAGMSLGAKGAAGPLPSEAVOMLCHQAFLL 1080
Db 1021 FHOQVWKNPTFFLRVISTDASLCYSILKAKNAGMSLGAKGAAGPLPSEAVOMLCHQAFLL 1080
Qy 1081 KLTRHRVTVPVLIGSLRTAQQLSRKLPGLTTLTALEAANPALPSDFKTILD 1132
Db 1081 KLTRHRVTVPVLIGSLRTAQQLSRKLPGLTTLTALEAANPALPSDFKTILD 1132

RESULT 6

AA26580

ID AAY26580 standard; protein; 1132 AA.

XX

AC AAY26580;

XX

DT 13-SEP-1999 (first entry)

XX

DE Human telomerase reverse transcriptase (hTERT) enzyme.

XX Telomerase reverse transcriptase: TERT; mouse; telomere length assay;
KW immunogen; enzyme; telomerase-mediated DNA replication; human.
XX Homo sapiens.
PN WO927113-A1.
PD 03-JUN-1999.
XX 25-NOV-1998; 98WO-US025211.
PR 26-NOV-1997; 97US-00979742.
XX 16-MAR-1998; 98US-00042460.
XX (GERO-) GERON CORP.
PA (YESH) UNIV YESHIVA EINSTEIN COLLEGE.
XX Morin GB, Allsopp R, Depinho R, Greenberg R;
PI WPI; 1999-347722/29.
XX Mouse telomerase reverse transcriptase (mTERT) enzyme proteins and
PT nucleic acids.
XX Disclosure; Fig 3; 135pp; English.
XX The invention relates to a mouse telomerase reverse transcriptase (mTERT)
CC enzyme. Compositions containing mTERT can be used in telomere length
CC assays. Isolated mTERT is useful as an immunogen for the production of
CC monoclonal or polyclonal antibodies. The method is useful for assessing
CC the degree of purification and identification of new mTERT species, such
CC as an mTERT allele, homolog or isoform, or to screen for modulators
CC (antagonists and agonists) of telomerase-mediated DNA replication.
CC Antagonists and agonists of mTERT can be used to modify the activity of
CC other telomerase enzymes such as human TERT (hTERT). The present sequence
CC represents a human TERT enzyme
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MPRAPRCRAVSLRSHYREVLPATFVRRLGPOGWRVLVQRGDPAAFALVAOCLVCVPM 60
Db 1 MPRAPRCRAVSLRSHYREVLPATFVRRLGPOGWRVLVQRGDPAAFALVAOCLVCVPM 60
Qy 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDGGARGGPEAFTTSVR 120
Db 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDGGARGGPEAFTTSVR 120
Qy 121 SYLNTVTDALRGSGAWGLLLRRVGDVVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLNTVTDALRGSGAWGLLLRRVGDVVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATQARPPHAGSPRRRLGCRAMNHSVREAGVPLGLPAPGARRGGASRSLPLPKPRR 240
Db 181 ATQARPPHAGSPRRRLGCRAMNHSVREAGVPLGLPAPGARRGGASRSLPLPKPRR 240
Qy 241 GAAPEPERTVQGSWAHPGRTGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300
Db 241 GAAPEPERTVQGSWAHPGRTGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300
Qy 301 ROHHAGPPSTRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSLRPSLTGARRL 360
Db 301 ROHHAGPPSTRPRPMDTFCPPVYAEKHFLLSYSGDKEQLRPSFLLSLRPSLTGARRL 360
Qy 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTPRRLVQLLRQHSPPWQVYFVRACLRLVPPGLWGS 480

Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSSPQWYGVFVRACTLRRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHLRREEI 540
Db 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHLRREEI 540
Qy 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLKRVOLRE 600
Db 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLKRVOLRE 600
Qy 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVA 660
Db 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRADPPPELFFVVDVGTAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRADPPPELFFVVDVGTAYDTI 720
Qy 721 PQDLRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQFYMRQFVAHL 780
Db 721 PQDLRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQFYMRQFVAHL 780
Qy 781 QETSPLADAVIIOSSSLNEASSGLFDVFLRPMCHHVRIRGKSYVQCQIPOGSIILSTL 840
Db 781 QETSPLADAVIIOSSSLNEASSGLFDVFLRPMCHHVRIRGKSYVQCQIPOGSIILSTL 840
Qy 841 LCSLCYGDMEKLPAGIRRDGLLLRLVDDFLAVTTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
Db 841 LCSLCYGDMEKLPAGIRRDGLLLRLVDDFLAVTTPHLTHAKTFLRTLVRGVPEYGCVVNL 900
Qy 901 RKTVMNPPVEDEALGTAFFVQMPAHGLFPWCGLLDTRTLEVOQSDYSSYARTSIRASLTF 960
Db 901 RKTVMNPPVEDEALGTAFFVQMPAHGLFPWCGLLDTRTLEVOQSDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGNRMRKLPGLVRLKCHSLFDLQVNSLQTVCTNIYKILLLQAVRFHACVLQLP 1020
Db 961 NRGFKAGNRMRKLPGLVRLKCHSLFDLQVNSLQTVCTNIYKILLLQAVRFHACVLQLP 1020
Qy 1021 FHQOVKNPFTFRLVSDTASLCYSILKAKNAGMSLGAKGAAGPLSEAVQWLCHOAFLL 1080
Db 1021 FHQOVKNPFTFRLVSDTASLCYSILKAKNAGMSLGAKGAAGPLSEAVQWLCHOAFLL 1080
Qy 1081 KLTRHRYVYVPLGLSLTAQTLQSLRKLPGTTLTALEAAANPALPSDFKTLID 1132
Db 1081 KLTRHRYVYVPLGLSLTAQTLQSLRKLPGTTLTALEAAANPALPSDFKTLID 1132

RESULT 7

AAG64859
ID AAG64859 standard; protein; 1132 AA.
XX
AC AAG64859;
XX
DT 21-SEP-2001 (first entry)
XX
DE Heart muscle cell differentiation related protein SEQ ID NO: 31.
XX
KW Heart muscle cell; human; cell differentiation; heart disease.
XX
OS Homo sapiens.
XX
PN W0200148151-A1.
XX
PD 05-JUL-2001.
XX
PF 27-DEC-2000; 2000WO-JP009323.
XX
PR 28-DEC-1999; 99JP-00372826.
PR 28-FEB-2000; 2000WO-JP001148.
PR 02-NOV-2000; 2000WO-JP007741.
XX
PA (KYOW) KYOWA HAKKO KOGYO KK.

XX Umezawa A, Hata J, Fukuda K, Ogawa S, Sakurada K, Gojo S;
PI Yamada Y;
XX
DR WPI; 2001-425656/45.
DR N-PSDB; ANH48235.
XX
PT Cells capable of differentiating into cardiomyocytes and originating in
PT bone marrow or umbilical blood cells for study of cardiomyocyte
PT differentiation and treatment of heart disease.
XX
PS Claim 87; Page 143-147; 183pp; Japanese.
XX
CC The present invention provides cells originating in the human bone marrow
CC or umbilical blood cells which are capable of differentiating into
CC cardiomyocytes. These cells are useful in the treatment of diseases
CC involving heart muscle degeneration, such as myocardial infarction, and
CC the study of cardiomyocyte differentiation. The present sequence is a
CC protein described in the exemplification of the invention
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVORGPAPAFRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGQGWRLVORGPAPAFRALVAOCLVCVPW 60
Qy 61 DARPPPAASFRQVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
Db 61 DARPPPAASFRQVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
Qy 121 SYLNTVTDALRGSGGAWGLLLRRVDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLNTVTDALRGSGGAWGLLLRRVDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATQARPPPHASGPRRLRGCEANVHVSREAGVPLGLPAGCARRRGGSASRLPLPKRPRR 240
Db 181 ATQARPPPHASGPRRLRGCEANVHVSREAGVPLGLPAGCARRRGGSASRLPLPKRPRR 240
Qy 241 GAAPEPERTPVGQGSWAHFGTRGSDRGFCVVSAPARPAEATSLLEGALSGTRHSHSVG 300
Db 241 GAAPEPERTPVGQGSWAHFGTRGSDRGFCVVSAPARPAEATSLLEGALSGTRHSHSVG 300
Qy 301 RQHAGPPSTSRPRPMDTPCPVYAEKHFLLYSSGDKQELRPSFLLSLRPSLTGARRL 360
Db 301 RQHAGPPSTSRPRPMDTPCPVYAEKHFLLYSSGDKQELRPSFLLSLRPSLTGARRL 360
Qy 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSSPQWYGVFVRACTLRRLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSSPQWYGVFVRACTLRRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHLRREEI 540
Db 481 RHNERRFLRNTKFIISLGKIAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHLRREEI 540
Qy 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLKRVOLRE 600
Db 541 LAKFLHLMMSVYVVELLSRFFYVTTTFQKNRLFYFYSKSVMSKLSQSIGIRQHLKRVOLRE 600
Qy 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVA 660
Db 601 LSAEVRQREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFRREKAEARLTSRVA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRADPPPELFFVVDVGTAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRADPPPELFFVVDVGTAYDTI 720

QY 721 PQDRLTEVIASIIKPNQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
DB 721 PQDRLTEVIASIIKPNQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
QY 781 QETSPLRDAVVEIOSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPQGSILSTL 840
DB 781 QETSPLRDAVVEIOSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPQGSILSTL 840
QY 841 LCSLCYGDGMENKLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPEYGCVVNL 900
DB 841 LCSLCYGDGMENKLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPEYGCVVNL 900
QY 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
DB 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
QY 961 NRGFKAGNNRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
DB 961 NRGFKAGNNRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
QY 1021 FHOQWKNPFFFLRVISDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHOAFL 1080
DB 1021 FHOQWKNPFFFLRVISDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHOAFL 1080
QY 1081 KLTRHRVTVYVPLGLSLRTAQTLRSKLPGLTTLTALEAAANPALPSDFKTILD 1132
DB 1081 KLTRHRVTVYVPLGLSLRTAQTLRSKLPGLTTLTALEAAANPALPSDFKTILD 1132

RESULT 8

AAG64329
ID AAG64329 standard; protein; 1132 AA.
AC AAG64329;
DT 24-SEP-2001 (first entry)
XX Human protein #2.
XX Angiogenesis; cardiant; cell differentiating agent; bone marrow;
KW heart muscle cell; heart disease; human.
XX Homo sapiens.
OS
XX WO200148149-A1.
FN
XX
XX 05-JUL-2001.
XX
XX 28-FEB-2000; 2000WO-JD001148.
XX
XX 28-DEC-1999; 99JP-00372826.
XX
XX (KYOW) KYOWA HAKKO KOGYO KK.
XX
XX Umezawa A, Hata J, Fukuda K, Ogawa S, Sakurada K;
XX WPI; 2001-418252/44.
DR N-PSDB; AAH49601.
XX
XX PT New adult bone marrow-originated cells capable of differentiating into
PT heart muscle cells, applicable as remedies for various heart diseases
PT particularly with damaged heart muscle accompanying degeneration.
XX
XX PS Disclosure; Page 128-134; 158pp; Japanese.
XX
XX The present invention relates to cells isolated from bone marrow, which
XX are capable of at least differentiating into heart muscle cells. The
CC cells are applicable as remedies for various heart diseases particularly
CC with damaged heart muscle accompanying degeneration. The present sequence
CC was used to illustrate the present invention
XX
XX Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLIRSHYREVLPATFVRRLLPQGWRLVORGDPAAFRALVAQCLVCVPM 60
DB 1 MPRAPRCRAVRSLIRSHYREVLPATFVRRLLPQGWRLVORGDPAAFRALVAQCLVCVPM 60
QY 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERCAKNVLAFFGALLDGAAGGPEAFTTSVR 120
DB 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERCAKNVLAFFGALLDGAAGGPEAFTTSVR 120
QY 121 SYLPTNTVDALGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
DB 121 SYLPTNTVDALGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
QY 181 ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAGARRRGGSASRSLLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAGARRRGGSASRSLLPKRPRR 240
QY 241 GAAPPERTPVQGSWAHPGRTGRGFCVSPARPAEATSLEGALSCTRHSHPVSG 300
DB 241 GAAPPERTPVQGSWAHPGRTGRGFCVSPARPAEATSLEGALSCTRHSHPVSG 300
QY 301 RQHAGPSTSRPPRPWDTPCPVYVYAEKHFYSSGDKQELRPSFLSSLRPSLTGARRL 360
DB 301 RQHAGPSTSRPPRPWDTPCPVYVYAEKHFYSSGDKQELRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPWMPGTFRRLPRLPORYWQMRPLFLELLGNHQAQCPVGLLTKHCPRAAVT 420
DB 361 VETIFLGSRPWMPGTFRRLPRLPORYWQMRPLFLELLGNHQAQCPVGLLTKHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRLVQLLRQHSSPWQYVGFVACRLRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEDTDPRLVQLLRQHSSPWQYVGFVACRLRLVPPGLWGS 480
QY 481 RHNERRRFLRNTKFTSLGKHAHLSLOELTWKMSVRDCAWLRSPGVGCVPAEHRLEBEI 540
DB 481 RHNERRRFLRNTKFTSLGKHAHLSLOELTWKMSVRDCAWLRSPGVGCVPAEHRLEBEI 540
QY 541 LAKFLHLMMSYVYVVELLRSFFYVTTETTFQKNRLFYKSVMSKLSQSIGIRHLKRVQRE 600
DB 541 LAKFLHLMMSYVYVVELLRSFFYVTTETTFQKNRLFYKSVMSKLSQSIGIRHLKRVQRE 600
QY 601 LSEAEVRQHREARPAALLTSRLRFPKPDGLRPIVNM DYVVGARTFREKRAERLTSRYKA 660
DB 601 LSEAEVRQHREARPAALLTSRLRFPKPDGLRPIVNM DYVVGARTFREKRAERLTSRYKA 660
QY 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRADODPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRADODPPPELYFVKVDVTGAYDTI 720
QY 721 PQDRLTEVIASIIKPNQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
DB 721 PQDRLTEVIASIIKPNQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
QY 781 QETSPLRDAVVEIOSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPQGSILSTL 840
DB 781 QETSPLRDAVVEIOSSSINEASSGLFDVFLRFMCHHAVIRGKSYVQCQIGIPQGSILSTL 840
QY 841 LCSLCYGDGMENKLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPEYGCVVNL 900
DB 841 LCSLCYGDGMENKLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVPEYGCVVNL 900
QY 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
DB 901 RKTVVNFPVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSYARTSIRASLTF 960
QY 961 NRGFKAGNNRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
DB 961 NRGFKAGNNRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020

QY 1021 FHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAAAGPLPSEAVQWILCHOAFLL 1080
DB 1021 FHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAAAGPLPSEAVQWILCHOAFLL 1080
QY 1081 KLTRHRVTVYVPLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSPDKTILD 1132
DB 1081 KLTRHRVTVYVPLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSPDKTILD 1132

RESULT 9

AAB99930
ID AAB99930 standard; protein; 1132 AA.
XX
AC AAB99930;
XX
DT 26-SEP-2001 (first entry)
XX
DE Human telomerase protein sequence SEQ ID NO:31.
XX
KW Differentiation; heart muscle cell; cytokine; transcription factor;
KW proliferation; surface antigen; heart disease; cardiomyocyte;
KW bone marrow; umbilical blood cell; heart muscle degeneration;
KW myocardial infarction.
XX
OS Homo sapiens.
XX
PN WO200148150-A1.
XX
PD 05-JUL-2001.
XX
PF 02-NOV-2000; 2000WO-JP007741.
XX
PR 28-DEC-1999; 99JP-00372826.
PR 28-FEB-2000; 2000WO-JP001148.
XX
XX (KYOW) KYOWA HAKKO KOGYO KK.
PA
PI Umezawa A, Hata J, Fukuda K, Ogawa S, Sakurada K, Gojo S;
PI Yamada Y;
XX
XX WPI; 2001-425655/45.
DR N-PSDB; AAH44366.
XX
XX
PT Cells capable of differentiating into cardiomyocytes and originating in
PT bone marrow or umbilical blood cells for study of cardiomyocyte
PT differentiation and treatment of heart disease.
XX
XX Claim 146; Page 137-141; 187pp; Japanese.
XX
CC The present invention describes cells originating in bone marrow or
CC umbilical blood cells which are capable of differentiating into
CC cardiomyocytes. Also described are: (1) cardiomyocytes produced by the
CC differentiation of the cells; (2) a method for carrying out the
CC differentiation into cardiomyocytes, regulated by a promotonal and/or
CC inhibitory factor; (3) a method for the differentiation of the cells into
CC cell types other than cardiomyocytes; (4) drug compositions promoting the
CC formation of heart muscle and regeneration of heart tissue which contain
CC the cells; (5) a method for the production of antibodies which recognise
CC the cells, especially antibodies which recognise a surface antigen on the
CC cells; (6) a method for screening factors which promote the proliferation
CC of the cells; (7) a method for immortalising the cells by expressing
CC telomerase in them; (8) drug compositions for the treatment of heart
CC disease which contain the immortalised cells; and (9) cell-free
CC supernatant from the culture of the cells and its use in promoting their
CC differentiation into cardiomyocytes. The cells are used in the treatment
CC of diseases involving heart muscle degeneration, such as myocardial
CC infarction and in the study of cardiomyocyte differentiation. AAH44351 to
CC AAH44409 and AAB99915 to AAB99935 represent sequences used in the
CC exemplification of the present invention
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;

Best Local Similarity 100.0%; Pred. No. 0; Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVORGDPAAAFRALVAOCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVORGDPAAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSPQVSCLELVARVLQRLCERGAKNVLAFAFALLDGAAGPPPEAFTTSVR 120
DB 61 DARPPPAAPSPQVSCLELVARVLQRLCERGAKNVLAFAFALLDGAAGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180
DB 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180
QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGSASRSLLPKRPRR 240
QY 241 GAAPEPERTPVGQGSWAHPGRTGRGSDRGFCVVSPPARPAEEATSLGALSGRHSHPSVG 300
DB 241 GAAPEPERTPVGQGSWAHPGRTGRGSDRGFCVVSPPARPAEEATSLGALSGRHSHPSVG 300
QY 301 ROHAGPPSTSRPPRPWDTPCPPVYAEATHFLYSSGDKQOLRPSFLSSLRPSLTGARRL 360
DB 301 ROHAGPPSTSRPPRPWDTPCPPVYAEATHFLYSSGDKQOLRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
DB 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPGQGSVAAPPEEEDTDPRRLVQLLRQHSPPWQVYGFVRACLRLRPLVPLGWS 480
DB 421 PAAGVCAREKPGQGSVAAPPEEEDTDPRRLVQLLRQHSPPWQVYGFVRACLRLRPLVPLGWS 480
QY 481 RHNERFLRNTKFIISLGKHAKLSLOELTWKMSVRDCAMLRSPGVCVPAAEHRLREBI 540
DB 481 RHNERFLRNTKFIISLGKHAKLSLOELTWKMSVRDCAMLRSPGVCVPAAEHRLREBI 540
QY 541 LAKPLHLMSVVVVELLSRFFVYTTTFOKNRUFFYRKSVWSKLQSIGIRQHUKRVOLRE 600
DB 541 LAKPLHLMSVVVVELLSRFFVYTTTFOKNRUFFYRKSVWSKLQSIGIRQHUKRVOLRE 600
QY 601 LSEAEVQRHREARPAALLTSRLRFIPKPDGLRPIVNNMDYVVGARTFRREKAEALTSRVKA 660
DB 601 LSEAEVQRHREARPAALLTSRLRFIPKPDGLRPIVNNMDYVVGARTFRREKAEALTSRVKA 660
QY 661 LFSVLNVERARRPGLLGASVGLGDDIHRAWRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRPGLLGASVGLGDDIHRAWRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PQRDLTEVTASIIKPONTYCVRRYAVVQKAAGHVKAFAKSHVSTLTDLPYNMROFVAHL 780
DB 721 PQRDLTEVTASIIKPONTYCVRRYAVVQKAAGHVKAFAKSHVSTLTDLPYNMROFVAHL 780
QY 781 QETSPLRDVAWTEQSSSLEASSGLPDFLRFMCHAVIRGKSYVQCGIIPGSIISLTL 840
DB 781 QETSPLRDVAWTEQSSSLEASSGLPDFLRFMCHAVIRGKSYVQCGIIPGSIISLTL 840
QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
DB 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
QY 901 RKTVMNPFVEDEALGCTAFVQMPAHLFPWCGLLDTRTLEVQSDYSSTVARTSIRASLTF 960
DB 901 RKTVMNPFVEDEALGCTAFVQMPAHLFPWCGLLDTRTLEVQSDYSSTVARTSIRASLTF 960
QY 961 NRGFKAGRNNRKLFGVRLRLKCHSLFLLDQVNSLQVCTNIYKILLQAYRFHACVQLQP 1020
DB 961 NRGFKAGRNNRKLFGVRLRLKCHSLFLLDQVNSLQVCTNIYKILLQAYRFHACVQLQP 1020
QY 1021 FHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAAAGPLPSEAVQWILCHOAFLL 1080

Db 1021 FHOQWKNPTFFLVRISDTASLCVSLKAKNAGSLGAKGAGPLPSEAVQWLCHQAFLL 1080

Qy 1081 KLTRHRTYVPLGLSLTAQTOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
 |||||
 Db 1081 KLTRHRTYVPLGLSLTAQTOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
 |||||

RESULT 10

AA82765

ID AAB82765 standard; protein; 1132 AA.

XX AAB82765;

XX 29-OCT-2001 (first entry)

XX Human telomerase reverse transcriptase.

XX Telomerase reverse transcriptase; hTERT; human; cancer; tumour;

KW cytotoxic T lymphocyte; major histocompatibility complex;

KW human leucocyte antigen; HLA-A2.1; vaccine.

XX Homo sapiens.

OS

XX

XX Key

PH Peptide Location/Qualifiers

FT 13..21

FT /note= "HLA-A2.1 binding motif"

FT 23..31

FT /note= "HLA-A2.1 binding motif"

FT 76..84

FT /note= "HLA-A2.1 binding motif"

FT 96..104

FT /note= "HLA-A2.1 binding motif"

FT 140..148

FT /note= "HLA-A2.1 binding motif"

FT 152..160

FT /note= "HLA-A2.1 binding motif"

FT 346..354

FT /note= "HLA-A2.1 binding motif"

FT 353..361

FT /note= "HLA-A2.1 binding motif"

FT 371..379

FT /note= "HLA-A2.1 binding motif"

FT 388..396

FT /note= "HLA-A2.1 binding motif"

FT 407..415

FT /note= "HLA-A2.1 binding motif"

FT 487..495

FT /note= "HLA-A2.1 binding motif"

FT 540..548

FT /label= p540

FT /note= "HLA-A2.1 binding motif"

FT 548..556

FT /note= "HLA-A2.1 binding motif"

FT 555..563

FT /note= "HLA-A2.1 binding motif"

FT 572..580

FT /note= "HLA-A2.1 binding motif"

FT 705..713

FT /note= "HLA-A2.1 binding motif"

FT 724..732

FT /note= "HLA-A2.1 binding motif"

FT 772..780

FT /note= "HLA-A2.1 binding motif"

FT 797..805

FT /note= "HLA-A2.1 binding motif"

FT 812..820

FT /note= "HLA-A2.1 binding motif"

FT 836..844

FT /note= "HLA-A2.1 binding motif"

FT 863..871

FT /note= "HLA-A2.1 binding motif"

FT 865..873

FT /label= p865

FT Peptide /note= "HLA-A2.1 binding motif"

FT 883..891

FT /note= "HLA-A2.1 binding motif"

FT 926..934

FT /note= "HLA-A2.1 binding motif"

FT 934..942

FT /note= "HLA-A2.1 binding motif"

FT 969..977

FT /note= "HLA-A2.1 binding motif"

FT 988..996

FT /note= "HLA-A2.1 binding motif"

FT 1072..1080

FT /note= "HLA-A2.1 binding motif"

FT 1079..1087

FT /note= "HLA-A2.1 binding motif"

FT 1095..1103

FT /note= "HLA-A2.1 binding motif"

FT 1122..1130

FT /note= "HLA-A2.1 binding motif"

XX

XX WO200160391-A1.

XX 23-AUG-2001.

XX 15-FEB-2001; 2001WO-US005143.

XX 15-FEB-2000; 2000US-0182685P.

XX 15-FEB-2001; 2001US-00182685.

XX (REGC) UNIV CALIFORNIA.

XX Zanetti M;

XX WPI; 2001-536552/59.

XX Vaccine for initiating and enhancing a cytotoxic T lymphocyte response,

XX for treating cancers or tumors or for inducing immune response against

XX tumors, comprises a telomerase reverse transcriptase peptide.

XX Disclosure; Fig 5; 52pp; English.

XX The present sequence is that of human telomerase reverse transcriptase

XX (hTERT). The sequence was analysed for 9-mer peptide sequences containing

XX known binding motifs for the human leukocyte antigen HLA-A2.1 molecule.

XX From an initial panel of about 30 candidate peptides, 2 sequences,

XX denoted p540 (see AAB82772) and p865 (see AAB82773), were examined. The

XX majority of healthy individuals as well as patients with prostate cancer

XX immunised in vitro against these 2 HLA-A2.1 restricted peptides developed

XX hTERT-specific cytotoxic T lymphocytes (CTL). The cancer patients' CTL

XX specifically lysed a variety of HLA-A2+ cancer cell lines such as

XX prostate, breast, colon, lung and melanoma, demonstrating immunological

XX recognition of endogenously-processed hTERT peptides. In vivo immunisation

XX of HLA-A2.1 transgenic mice generated a specific CTL response against

XX both hTERT peptides. The induction of CTL responses in vitro and in vivo,

XX and the susceptibility to lysis of tumour cells of various origins by

XX hTERT CTL suggest that hTERT could serve as a universal cancer vaccine for

XX humans. Thus a claimed universal vaccine for treating tumours of any

XX origin comprises at least 1 hTERT peptide in an amount effective for

XX initiating and enhancing a CTL response against cancer cells. The peptide

XX is 7-15 amino acid residues in length and may be modified to enhance

XX binding to the major histocompatibility complex. Also claimed is a method

XX for inducing and enhancing a CTL response against cancer cells, involving

XX harvesting blood leucocytes, pulsing with hTERT, and contacting cancer

XX cells with the pulsed leucocytes. A method for targeting CTL to tumour

XX cells is also claimed, and involves administering a hTERT peptide to a

XX mammal, especially a cancer patient

XX Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 4; Length 1132;

Best Local Similarity 100.0%; Pred. NO. 0;

Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
DB 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
DB 121 SYLPTNTVDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGASRSLLPLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGASRSLLPLPKRPRR 240
QY 241 GAAPERTPVGOGSWAHFQRTGSDRGFCVVSPPARPAEATSLGALSGLTGRHSHPSVG 300
DB 241 GAAPERTPVGOGSWAHFQRTGSDRGFCVVSPPARPAEATSLGALSGLTGRHSHPSVG 300
QY 301 ROHHAGPPSTSRPPRWDTPCPVYAKTHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360
DB 301 ROHHAGPPSTSRPPRWDTPCPVYAKTHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
DB 361 VETIFLGSRPMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOQSVAAPBEDTDRRLVQLLRQHSPPWQYGFVRACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPOQSVAAPBEDTDRRLVQLLRQHSPPWQYGFVRACLRRLVPPGLWGS 480
QY 481 RHNERFLRNTKFIISLGKHAHLSQELTWKMSVRDCAWLRSPGVGCVPAEAHRLEEEI 540
DB 481 RHNERFLRNTKFIISLGKHAHLSQELTWKMSVRDCAWLRSPGVGCVPAEAHRLEEEI 540
QY 541 LAKFLHLMMSVYVVELLRSFFYTTFQKNRFFFYRKSWKLSQISGIRQHILKRVOLRE 600
DB 541 LAKFLHLMMSVYVVELLRSFFYTTFQKNRFFFYRKSWKLSQISGIRQHILKRVOLRE 600
QY 601 LSAEVRQHREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFREKGAERLTSRVKA 660
DB 601 LSAEVRQHREARPAALLTSRLRPIKPDGLRPIVNMDDYVVGARTFREKGAERLTSRVKA 660
QY 661 LFSVLNAYERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
DB 661 LFSVLNAYERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
QY 721 PODRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
DB 721 PODRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
QY 781 QETSPLRDAVVIQSSSLNASSGLFDVFLRFMCHAVIRGKSYVOCQIGIPGSSILSTL 840
DB 781 QETSPLRDAVVIQSSSLNASSGLFDVFLRFMCHAVIRGKSYVOCQIGIPGSSILSTL 840
QY 841 LCSICYGDMENKLFAGTRRGLLRLVDDFLVTPHLLTHAKTLFRTLVRGVPEYGCVVNL 900
DB 841 LCSICYGDMENKLFAGTRRGLLRLVDDFLVTPHLLTHAKTLFRTLVRGVPEYGCVVNL 900
QY 901 RKTWNVPVDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVDSDYSSYARTSIRASLTF 960
DB 901 RKTWNVPVDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVDSDYSSYARTSIRASLTF 960
QY 961 NRQFKAGNRMRKLFVGLRLKCHSLFLDLQVNSLQVTCNIIYKILLQAVRFHACVLQLP 1020
DB 961 NRQFKAGNRMRKLFVGLRLKCHSLFLDLQVNSLQVTCNIIYKILLQAVRFHACVLQLP 1020
QY 1021 FHOQWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWILCHQAFLL 1080
DB 1021 FHOQWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWILCHQAFLL 1080
QY 1081 KLTRHRYTVVPLLGSLRTAQTLQSRKLPGTTLTALEAAANPALPSDFKTILD 1132

DB 1081 KLTRHRYTVVPLLGSLRTAQTLQSRKLPGTTLTALEAAANPALPSDFKTILD 1132
RESULT 11
AAE29226
ID AAE29226 standard; protein; 1132 AA.
XX
AC AAE29226;
DT 27-JAN-2003 (first entry)
XX
DE Human telomerase reverse transcriptase (TERT).
XX
KW Carbohydrate antigen; alpha(1,3)galactosyltransferase; alpha1.3GT; TERT;
transgenic; alpha(1,2)fucosyltransferase; alpha1.2Ft; human; enzyme;
telomerase reverse transcriptase.
XX
OS Homo sapiens.
XX
PN WO200274948-A2.
PD 26-SEP-2002.
XX
PF 21-MAR-2002; 2002WO-CA000378.
XX
PR 21-MAR-2001; 2001US-0277811P.
XX
PA (GERO-) GERON CORP.
XX
PI Denning C, Clark AJ, Schiff JM;
XX
DR WPI; 2002-759895/82.
DR N-PSDB; AAD46821.
XX
PT Mammalian cells, useful for producing animal tissues with carbohydrate
antigens that are compatible for transplantation into human patients.
XX
PS Disclosure; Page 34; 71pp; English.
XX
CC The invention relates to animal tissues with carbohydrate antigens that
are compatible for transplantation into human patients. The mammalian
cell is inactivated homoyously for expression of alpha(1,3)galactosyl-
transferase (alpha1,3GT) gene and comprises a transgene for alpha(1,2)-
fucosyltransferase (alpha1,2Ft). It is useful for producing animal tissue
with carbohydrate antigens that are compatible for transplantation into
human patients. The present sequence is human telomerase reverse
transcriptase (TERT) used in the invention
XX
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 5; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
DB 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAKNVLAFCGALLDARGGPPPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
DB 121 SYLPTNTVDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGASRSLLPLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGASRSLLPLPKRPRR 240
QY 241 GAAPERTPVGOGSWAHFQRTGSDRGFCVVSPPARPAEATSLGALSGLTGRHSHPSVG 300
DB 241 GAAPERTPVGOGSWAHFQRTGSDRGFCVVSPPARPAEATSLGALSGLTGRHSHPSVG 300

Db 241 GAAPERTPVQGSWAHPGTRGSDRGFCVSPARPABEATSLEGALSGTRHSHPSVG 300
Qy 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQOLRPSFLSSLRPSLTGARRL 360
Db 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQOLRPSFLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRRPMPTGTRRLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRRPMPTGTRRLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPBEEDTDPRLVLQRLHSHSPWQYGVFVRACLRRLLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPBEEDTDPRLVLQRLHSHSPWQYGVFVRACLRRLLVPPGLWGS 480
Qy 481 RHNERERLNTKFKISLGKIAKLSLOELTWKMSVRDCAWLRSPGVGCVPAASHRUREE 540
Db 481 RHNERERLNTKFKISLGKIAKLSLOELTWKMSVRDCAWLRSPGVGCVPAASHRUREE 540
Qy 541 LAKFLHLMMSVYVVELLRSFFYVTTTFQKNRLFYFKKSVMSKLQSIGIRQHILKRVQLRE 600
Db 541 LAKFLHLMMSVYVVELLRSFFYVTTTFQKNRLFYFKKSVMSKLQSIGIRQHILKRVQLRE 600
Qy 601 LSEAEVQREARPAALTSRLRTPKPDGLRPIVNMDDYVVGARTFRREKRAELTSRVKA 660
Db 601 LSEAEVQREARPAALTSRLRTPKPDGLRPIVNMDDYVVGARTFRREKRAELTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFKVDVVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFKVDVVTGAYDTI 720
Qy 721 PQRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PQRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Qy 781 QETSPURDADVVIQSSSLNEASSGLFDVFLRFCHHAVIRGKSYVQCGIPOGSIILSTL 840
Db 781 QETSPURDADVVIQSSSLNEASSGLFDVFLRFCHHAVIRGKSYVQCGIPOGSIILSTL 840
Qy 841 LCSICYGDMENKLFAGIRRDGLLRLVDDPLLVTPHLTHAKTFLRTLVRGVEYGCNNL 900
Db 841 LCSICYGDMENKLFAGIRRDGLLRLVDDPLLVTPHLTHAKTFLRTLVRGVEYGCNNL 900
Qy 901 RKTVMNFPVDEALGTAFAVQMPAHGLFPWCGLLDDTRTLEVQSDYSSYARTSIRASLTF 960
Db 901 RKTVMNFPVDEALGTAFAVQMPAHGLFPWCGLLDDTRTLEVQSDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGRNRRKLFGLRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRHACVLQLP 1020
Db 961 NRGFKAGRNRRKLFGLRLKCHSLFDLQVNSLQTVCTNIYKILLQAYRHACVLQLP 1020
Qy 1021 FHQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
Db 1021 FHQVWKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
Qy 1081 KLTRHRTVYVPLIGSLRTAQTLRSKLPGLTTLTALBAANPALPDSDFKTILD 1132
Db 1081 KLTRHRTVYVPLIGSLRTAQTLRSKLPGLTTLTALBAANPALPDSDFKTILD 1132

RESULT 12

AAU72735
ID AAU72735 standard; protein; 1132 AA.
XX
XX AAU72735;
AC
DT 09-APR-2002 (first entry)
XX
DE Human telomerase reverse transcriptase (TERT).
XX
KW Telomerase reverse transcriptase; TERT; cytostatic; apoptosis;
KW cell growth inhibitor; antisense oligonucleotide; antisense technology.
XX
OS Homo sapiens.

XX
PN WO20018198-A1.
XX
PD 22-NOV-2001.
XX
PF 15-MAY-2001; 2001WO-US015774.
XX
PR 16-MAY-2000; 2000US-00572423.
PR 07-DEC-2000; 2000US-00733294.
XX
PA (ISIS-) ISIS PHARM INC.
XX
PI Monia BP, Gaarde WA, Freier SM, Wancewicz E;
XX
DR WPI; 2002-075321/10.
DR N-PSDB; AAS96607.
XX
PT New compound targeted to nucleic acid molecule encoding telomerase
PT transcriptase (TERT), which specifically hybridizes with and inhibits
PT expression of TERT, useful for modulating apoptosis and inhibiting cell
PT growth.
XX
PS Disclosure; Page 100-105; 154pp; English.
XX
CC The invention describes a compound, 8-50 nucleobases in length targeted
CC to a nucleic acid molecule encoding human TERT (telomerase reverse
CC transcriptase), where the compound specifically hybridizes with and
CC inhibits the expression of TERT. A series of oligonucleotides were
CC designed to target different regions of the human TERT RNA. These were 20
CC nucleotides in length and composed of a central gap region consisting of
CC ten 2'-deoxynucleotides, flanked on both sides (5' and 3' directions) by
CC five-nucleotide wings. The wings were composed of 2'-methoxyethyl (2'-
CC MOE) nucleotides. The compounds were analysed for their effect on human
CC TERT mRNA levels by reverse transcriptase (RT)-polymerase chain reaction
CC (PCR). The compound is useful for inhibiting the expression of TERT in
CC cells or tissues, for treating a human having disease or condition
CC associated with TERT, for modulating apoptosis, for inhibiting cell
CC growth (preferably, cancer cell growth), in antisense therapy and for
CC diagnostic and therapeutics. This is the amino acid sequence of human
CC telomerase reverse transcriptase (TERT), described in the method of the
XX invention

Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 5; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPOGWRLVQRGDPAAFRALVAQCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPOGWRLVQRGDPAAFRALVAQCLVCVPW 60
Qy 61 DARPPPAAPSPROVSCUKELVARVLQRCERGAKNVLAFGPALLDARGGPEAFTTSVR 120
Db 61 DARPPPAAPSPROVSCUKELVARVLQRCERGAKNVLAFGPALLDARGGPEAFTTSVR 120
Qy 121 SYLNTVNTDALRGSGAWGLLRLRVGDDVLVHLARCALFVLVAPSCAYVQCGPLYLGA 180
Db 121 SYLNTVNTDALRGSGAWGLLRLRVGDDVLVHLARCALFVLVAPSCAYVQCGPLYLGA 180
Qy 181 ATQARPPPHASGPRRLGRCERAWNHSVREAGVPLGLPAPGARRRGGSASRLPKRPRR 240
Db 181 ATQARPPPHASGPRRLGRCERAWNHSVREAGVPLGLPAPGARRRGGSASRLPKRPRR 240
Qy 241 GAAPERTPVQGSWAHPGTRGSDRGFCVSPARPABEATSLEGALSGTRHSHPSVG 300
Db 241 GAAPERTPVQGSWAHPGTRGSDRGFCVSPARPABEATSLEGALSGTRHSHPSVG 300
Qy 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQOLRPSFLSSLRPSLTGARRL 360
Db 301 RQHAGPSTSRPRPMDTCCPPVYAEKTHFLYSSGDKQOLRPSFLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRRPMPTGTRRLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420

Db 361 VETIFLGSRPWPGTTPRRRLPQRYQWMPLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVOLLQHSPPWQVGFVRACLRRLLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVOLLQHSPPWQVGFVRACLRRLLVPPGLWGS 480
Qy 481 RHNERRPLNKKFISLGKHAQSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERRPLNKKFISLGKHAQSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Qy 541 LAKFLHLMVYVVELLSRPFYTTTFQKNRLFYRKSVWSKLSQSIGIRQHVKRVLRE 600
Db 541 LAKFLHLMVYVVELLSRPFYTTTFQKNRLFYRKSVWSKLSQSIGIRQHVKRVLRE 600
Qy 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPINMDYVVGARTFRREKRAELTSRVKA 660
Db 601 LSAEVRQHREARPAALLTSRLRIPKPDGLRPINMDYVVGARTFRREKRAELTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAODPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRQAODPPPELYFVKVDVTGAYDTI 720
Qy 721 QDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPQYMRQFVAHL 780
Db 721 QDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPQYMRQFVAHL 780
Qy 781 QETSPURDVAVIEQSSSLNEASSGLFDVFLRFCHHVRIRGKSVYQCGIPGSGISLSTL 840
Db 781 QETSPURDVAVIEQSSSLNEASSGLFDVFLRFCHHVRIRGKSVYQCGIPGSGISLSTL 840
Qy 841 LCSLCYGDMEKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVMNL 900
Db 841 LCSLCYGDMEKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVMNL 900
Qy 901 RKTVMNPFVEDEALGTAFFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSVARTSIRASLTP 960
Db 901 RKTVMNPFVEDEALGTAFFVQMPAHGLFPWCGLLLDTRTLEVSQSDYSSVARTSIRASLTP 960
Qy 961 NRGFKAGNRMRKLFVLRUKCHSLFDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Db 961 NRGFKAGNRMRKLFVLRUKCHSLFDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Qy 1021 FHQOVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFLIL 1080
Db 1021 FHQOVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWILCHOAFLIL 1080
Qy 1081 KLTRHRVTVYVPLGLSLRTAQTLRSKLPGLTTLTALEAAANPALPSDFKTILD 1132
Db 1081 KLTRHRVTVYVPLGLSLRTAQTLRSKLPGLTTLTALEAAANPALPSDFKTILD 1132

RESULT 13

ABR42384
ID ABR42384 standard; protein; 1132 AA.
XX
AC ABR42384;
XX
DT 11-AUG-2003 (first entry)
XX
DE Human telomerase reverse transcriptase.
XX
KW Telomerase reverse transcriptase; TERT; enzyme; RNA interference;
KW short interfering RNA; siRNA; cancer; tumour; cytostatic; contraceptive;
KW immunosuppressive; antiinfertility; fungicide; antiparasitic;
XX antiinflammatory; human; gene therapy.
OS Homo sapiens.
XX
PN WO2003035667-A2.
XX
PD 01-MAY-2003.
XX

PF 16-OCT-2002; 2002WO-US033065.
XX
PR 22-OCT-2001; 2001US-0345326P.
PR 20-FEB-2002; 2002US-0359196P.
PR 22-MAY-2002; 2002US-0383195P.
XX
PA (UYRP) UNIV ROCHESTER.
XX
PI Rowley PT;
XX
DR WPI; 2003-403336/38.
DR N-PSDB; ACC58039.
XX
PT Novel double-stranded short interfering RNA having sense and antisense
nucleic acids which are complementary to each other and to target nucleic
acid e.g., telomerase RNA or mRNA encoding telomerase reverse
transcriptase.
XX
PS Disclosure; Fig 4; 37pp; English.
XX
CC The present sequence is the protein sequence of human telomerase reverse
transcriptase (TERT). The invention relates to the discovery that double-
stranded interfering RNAs, such as short interfering RNAs (siRNA), which
target telomerase RNA or TERT mRNA are capable of inhibiting telomerase
activity. Inhibition of telomerase in cancer cells leads to telomere
shortening, end-to-end chromosomal fusion, and apoptosis. Interference of
telomerase activity can also be used for treatment of infertility, for
contraception or sterilisation, for immunosuppression, for treatment of
yeast, parasite and fungal infections, and in antiinflammatory therapies.
CC As telomerase is active in a limited number of cell types, e.g. tumour
cells, germline cells, certain stem cells of the haematopoietic system, T
cells and B cells, sun-damaged skin, and proliferative cervix, most normal
cells are not affected by telomerase RNA interference therapy
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRRLGPOGRLVORGDPAAFRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRRLGPOGRLVORGDPAAFRALVAOCLVCVPW 60
Qy 61 DARPPAAPSPQVSCLELVARVLQRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
Db 61 DARPPAAPSPQVSCLELVARVLQRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
Qy 121 SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLPNTVTDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240
Db 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240
Qy 241 GAAPEPERTVPGQSWAHFGRTRGSDRGFCVVSPPARPAEATSLRGALSGTRHSHPSVG 300
Db 241 GAAPEPERTVPGQSWAHFGRTRGSDRGFCVVSPPARPAEATSLRGALSGTRHSHPSVG 300
Qy 301 RQHAGPPSTSRPPRPWDTPCPCPVYAETKHFLYSSGDKBQLRPSFLLSLRLPSLTGARRL 360
Db 301 RQHAGPPSTSRPPRPWDTPCPCPVYAETKHFLYSSGDKBQLRPSFLLSLRLPSLTGARRL 360
Qy 361 VETIFLGSRPWPGTTPRRRLPQRYQWMPLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPWPGTTPRRRLPQRYQWMPLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVOLLQHSPPWQVGFVRACLRRLLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVOLLQHSPPWQVGFVRACLRRLLVPPGLWGS 480
Qy 481 RHNERRFLNKKFISLGKHAQSLQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540

Db 481 RHNERFLRNTKFTSLGKHAQLSQELTWKNSVQDCAWLRSPGVGCPAAEHLREEI 540
QY 541 LAKFLHLMWSVYVVELLRSFFVVTETTFQKNRLFFYKSVWSKLQSIGIRQHLKRVLRE 600
Db 541 LAKFLHLMWSVYVVELLRSFFVVTETTFQKNRLFFYKSVWSKLQSIGIRQHLKRVLRE 600
QY 601 LSEAEVRQHREARPALITSRLRFIPKPDGLRPIVNMDDYVVGARTFREKRAERLTSRVKA 660
Db 601 LSEAEVRQHREARPALITSRLRFIPKPDGLRPIVNMDDYVVGARTFREKRAERLTSRVKA 660
QY 661 LFSVLNVERARRPGLGASVLGLDDIHRAMRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLGASVLGLDDIHRAMRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
Db 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLPYMRQFVAHL 780
QY 781 QETSPLRDVAVIEQSSLSNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
Db 781 QETSPLRDVAVIEQSSLSNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
QY 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRLTVRGVPEYGCVNL 900
Db 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRLTVRGVPEYGCVNL 900
QY 901 RKTVNVFPVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVDOSDYSSVARTSIRASLTF 960
Db 901 RKTVNVFPVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVDOSDYSSVARTSIRASLTF 960
QY 961 NRGFKAGNNRRKLFVGLRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Db 961 NRGFKAGNNRRKLFVGLRLKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
QY 1021 FHOQVKNPTFFELRVISDTSILCYSLIKAKNAGNSLGAAGAAGPLPSEAVQMLCHQAFLL 1080
Db 1021 FHOQVKNPTFFELRVISDTSILCYSLIKAKNAGNSLGAAGAAGPLPSEAVQMLCHQAFLL 1080
QY 1081 KLTRHRYVYVPLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
Db 1081 KLTRHRYVYVPLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
RESULT 14
ABR42063
ID ABR42063 standard; protein; 1132 AA.
XX ABR42063;
AC ABR42063;
XX ABR42063;
DT 28-JUL-2003 (first entry)
XX Human telomerase reverse transcriptase.
DE Telomerase reverse transcriptase; TERT; enzyme; RNA interference;
XX short interfering RNA; siRNA; cancer; tumour; cytostatic; contraceptive;
KW immunosuppressive; antifertility; fungicide; antiparasitic;
XX antiinflammatory; human; gene therapy.
OS Homo sapiens.
XX WO2003034985-A2.
PN 01-MAY-2003.
XX 16-OCT-2002; 2002WO-US033146.
XX 22-OCT-2001; 2001US-0345326P.
PR 20-FEB-2002; 2002US-0359196P.
PR 22-MAY-2002; 2002US-0383195P.
XX (UYRP) UNIV ROCHESTER.
PA
XX

PI Rowley PT;
XX WPI; 2003-403289/38.
DR N-PSDB; ACC57552.
XX Novel nucleic acid encoding or comprising interfering RNAs which target
PT telomerase RNA, useful for inhibiting telomerase activity for treating
PT cancer, infertility and disorders of the immune system.
XX Disclosure; Fig 4; 52pp; English.
XX The present sequence is that of human telomerase reverse transcriptase
CC (TERT). The invention relates to the discovery that double-stranded
CC interfering RNAs, such as short interfering RNAs (siRNA), which target
CC telomerase RNA or TERT mRNA are capable of inhibiting telomerase
CC activity. Inhibition of telomerase in cancer cells leads to telomere
CC shortening, end-to-end chromosomal fusion, and apoptosis. Interference of
CC telomerase activity can also be used for treatment of infertility, for
CC contraception or sterilisation, for immunosuppression, for treatment of
CC yeast, parasite and fungal infections, and in antiinflammatory therapies.
CC As telomerase is active in a limited number of cell types, e.g. tumour
CC cells, germline cells, certain stem cells of the haematopoietic system, T
CC and B cells, sun-damaged skin, and proliferative cervix, most normal
CC cells are not affected by telomerase RNA interference therapy
XX Sequence 1132 AA;
SQ
Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVSLRSHRYEVLPLATFVRRLGPOGWRVLVQGDPAAPALVAQCILVCVPW 60
Db 1 MPRAPRCRAVSLRSHRYEVLPLATFVRRLGPOGWRVLVQGDPAAPALVAQCILVCVPW 60
QY 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 120
Db 61 DARPPPAAPSPQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 120
QY 121 SYLNTVTTDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPLYLGA 180
Db 121 SYLNTVTTDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPLYLGA 180
QY 181 ATOARPPPHASGPRRRRLGCEAWNHSVREAGVPLGLPAGARRRGGSASRLPLPKRPRR 240
Db 181 ATOARPPPHASGPRRRRLGCEAWNHSVREAGVPLGLPAGARRRGGSASRLPLPKRPRR 240
QY 241 GAAPERTPVQGSWAHPGRTGRGSDRGFCVSPARPABEATSEALSGSTRHSHPSVG 300
Db 241 GAAPERTPVQGSWAHPGRTGRGSDRGFCVSPARPABEATSEALSGSTRHSHPSVG 300
QY 301 ROHHAGPSTSRPPRPMDTTPCPVYAEYKHLFYSYSGDKEQLRPSFLSSLRPSLTGARRL 360
Db 301 ROHHAGPSTSRPPRPMDTTPCPVYAEYKHLFYSYSGDKEQLRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRPMPGTPRRLPRLPORYQWMPPLFLELGNHACQCPYGVLLKTHKCPRAAVT 420
Db 361 VETIFLGSRPMPGTPRRLPRLPORYQWMPPLFLELGNHACQCPYGVLLKTHKCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSFPWQVGFVFRACLRRLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSFPWQVGFVFRACLRRLVPPGLWGS 480
QY 481 RHNERFLRNTKFTSLGKHAQLSQELTWKNSVQDCAWLRSPGVGCPAAEHLREEI 540
Db 481 RHNERFLRNTKFTSLGKHAQLSQELTWKNSVQDCAWLRSPGVGCPAAEHLREEI 540
QY 541 LAKFLHLMWSVYVVELLRSFFVVTETTFQKNRLFFYKSVWSKLQSIGIRQHLKRVLRE 600
Db 541 LAKFLHLMWSVYVVELLRSFFVVTETTFQKNRLFFYKSVWSKLQSIGIRQHLKRVLRE 600
QY 601 LSEAEVRQHREARPALITSRLRFIPKPDGLRPIVNMDDYVVGARTFREKRAERLTSRVKA 660
Db 601 LSEAEVRQHREARPALITSRLRFIPKPDGLRPIVNMDDYVVGARTFREKRAERLTSRVKA 660

Db 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
QY 661 LFSVLNAYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNAYERARRPGLLGASVLGLDDIHRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PQDLRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLQPYNRQFVAHL 780
Db 721 PQDLRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLQPYNRQFVAHL 780
QY 781 QETSPURDVAVVIQSSSLNEASSGLPDVFLREWCHHVRIRGKSYVQCQGIPOGSIILSTL 840
Db 781 QETSPURDVAVVIQSSSLNEASSGLPDVFLREWCHHVRIRGKSYVQCQGIPOGSIILSTL 840
QY 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRLTVRGVPEYGCVVNL 900
Db 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLLTHAKTFLRLTVRGVPEYGCVVNL 900
QY 901 RKTVMNPPVDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVOQSDYSSYARTSIRASLTF 960
Db 901 RKTVMNPPVDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVOQSDYSSYARTSIRASLTF 960
QY 961 NRGFKAGNNRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLLOAYRFHACVLOLP 1020
Db 961 NRGFKAGNNRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLLOAYRFHACVLOLP 1020
QY 1021 FHOQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHQAFLL 1080
Db 1021 FHOQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKAAGPLPSEAVQWLCHQAFLL 1080
QY 1081 KLTRHRTVTVPLGLSLRTAQTLQSRKLPGLTTLTALBAANPALPSDFKTILD 1132
Db 1081 KLTRHRTVTVPLGLSLRTAQTLQSRKLPGLTTLTALBAANPALPSDFKTILD 1132

RESULT 15

ABP56676
ID ABP56676 standard; protein; 1132 AA.
AC ABP56676;
XX
XT 25-MAR-2003 (first entry)
XX
DE Human telomerase reverse transcriptase protein SEQ ID NO:2.
XX
KW Human; telomerase reverse transcriptase; enzyme; hTERT; chromosome 5;
KW vulnery; antiulcer; epithelial cell migration promoter; wound;
KW epithelisation; skin wound; lesion; burn; surgical incision; ulcer;
KW epithelial cell; keratinocyte; epidermal; mucosal.
XX
OS Homo sapiens.
XX
PN WO200291999-A2.
XX
PD 21-NOV-2002.
XX
PF 09-MAY-2002; 2002WO-US014867.
XX
PR 09-MAY-2001; 2001US-0289903P.
XX
PA (GERO-) GERON CORP.
XX
PI Jiang X, Chiu C, Harley CB;
XX WPI; 2003-120591/11.
DR N-PSDB; ABZ22474.
XX
XX Composition for treating wounds and enhancing epithelization of a skin
PT surface, comprises vector encoding telomerase reverse transcriptase or
PT telomerized epithelial cells on a microparticle or a matrix.
XX
PS Disclosure; Page 32; 68pp; English.
XX

CC The present invention describes a pharmaceutical composition (I) comprising a vector encoding telomerase reverse transcriptase (TERT) in an excipient or device, or comprises telomerised epithelial cells on a microparticle or a matrix suitable for topical administration or administration to a wound site. (I) has vulnerary and antiulcer activities and can be used to promote epithelial cell migration. (I) is useful for treating a wound and enhancing epithelisation of a skin surface. The wound is especially skin wound including acute lesion such as traumatic lesion, burn, or surgical incision, chronic lesion such as chronic venous ulcer, diabetic ulcer or compression ulcer and the wound is further monitored for closure. The telomerase activity or TERT expression is increased in epithelial cells at the site of treatment and also in fibroblasts or endothelial cells at the site of treatment. The epithelial cells are especially keratinocytes. A polynucleotide encoding TERT is useful for the preparation of a medicament for treatment of a wound or an epithelial surface in a human or animal. An epithelial cell with increased telomerase activity or increased expression of TERT is useful for preparation of a medicament for the treatment of a wound in a human or animal. (I) is also useful for treating wounds of other epidermal surfaces including mucosal surfaces such as bronchus, mouth, nose, oesophagus, stomach, or intestine. The present sequence represents human TERT (hTERT), which is given in the exemplification of the present invention. hTERT is located to chromosome 5
XX
SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPCRCAVRSLRLSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
Db 1 MPRAPCRCAVRSLRLSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAOCLVCVPW 60
QY 61 DARPPAAPSPQVSCLELVARVQLRCERGAKNVLAEGFALLDARGCGPPFAFTSVR 120
Db 61 DARPPAAPSPQVSCLELVARVQLRCERGAKNVLAEGFALLDARGCGPPFAFTSVR 120
QY 121 SYLNTVTDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Db 121 SYLNTVTDALRGSGAWGLLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATOARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLKPRR 240
Db 181 ATOARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLKPRR 240
QY 241 GAAPEPRTFVCGSWAHGPRTRGSDRGFCVUSPARPAEATSLGALSGTRHSHPSVG 300
Db 241 GAAPEPRTFVCGSWAHGPRTRGSDRGFCVUSPARPAEATSLGALSGTRHSHPSVG 300
QY 301 ROHHAGPPSTSPRPPWDTPCPVYAETKHFLYSSGDKQOLRPSFLLSLRPSLTGARRL 360
Db 301 ROHHAGPPSTSPRPPWDTPCPVYAETKHFLYSSGDKQOLRPSFLLSLRPSLTGARRL 360
QY 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCYPYGLLTKHCPLRAAVT 420
Db 361 VETIFLGSRPWMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCYPYGLLTKHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSVAAPBEEDTDPRLLVOLLROHSSPWQVYGFVTRACLRLLVPPGLWGS 480
Db 421 PAAGVCAREKPOGSVAAPBEEDTDPRLLVOLLROHSSPWQVYGFVTRACLRLLVPPGLWGS 480
QY 481 RHNERPFLNTKKFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVCVPAAEHRLREEI 540
Db 481 RHNERPFLNTKKFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVCVPAAEHRLREEI 540
QY 541 LAKFLHMLSVVVELLSRFYVTTTFOKRLFFYRKSVWSKLQSIGIRQHILKRVOLRE 600
Db 541 LAKFLHMLSVVVELLSRFYVTTTFOKRLFFYRKSVWSKLQSIGIRQHILKRVOLRE 600
QY 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660
Db 601 LSEAEVQRHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660

Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
Qy 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHRKAFKSHVSTLTLQPYMRQFVAHL 780
Db 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHRKAFKSHVSTLTLQPYMRQFVAHL 780
Qy 781 QETSPLDADVIEQSSINASSGLFDVFLRECHHVRIRGKSYVQCQIPIGGSILSTL 840
Db 781 QETSPLDADVIEQSSINASSGLFDVFLRECHHVRIRGKSYVQCQIPIGGSILSTL 840
Qy 841 LCSLCYGDMMENKLPAGIRRDGLLRLVDDFLLVTPHLLTHAKTFLRLVIRGVPYGCVMNL 900
Db 841 LCSLCYGDMMENKLPAGIRRDGLLRLVDDFLLVTPHLLTHAKTFLRLVIRGVPYGCVMNL 900
Qy 901 RKTVPNFPVEDEALGTFVQMPAHGLFPWCGLLDTRTLEVDSDYSSVARTSIRASLTF 960
Db 901 RKTVPNFPVEDEALGTFVQMPAHGLFPWCGLLDTRTLEVDSDYSSVARTSIRASLTF 960
Qy 961 NRGFKAGNNRRKLPVLRKCHSLFDLDQVNSLQVCTNIYKILLQAYRHFACVQLP 1020
Db 961 NRGFKAGNNRRKLPVLRKCHSLFDLDQVNSLQVCTNIYKILLQAYRHFACVQLP 1020
Qy 1021 FHOQVKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQMLCHQAFLL 1080
Db 1021 FHOQVKNPTFFLRVISDTSASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQMLCHQAFLL 1080
Qy 1081 KLTRHRVTVYVPLGSLRTAQTLQSRKLPGLTTLTALEAAANPALPSDFKILD 1132
Db 1081 KLTRHRVTVYVPLGSLRTAQTLQSRKLPGLTTLTALEAAANPALPSDFKILD 1132

RESULT 16
ABR58045
ID ABR58045 standard; protein; 1132 AA.
XX AC ABR58045;
XX 29-AUG-2003 (first entry)
XX Human telomerase reverse transcriptase.
XX Enzyme; human; telomerase reverse transcriptase; adipogenic capacity;
KW primary preadipocyte cell; adipogenesis; obesity; adipocytokine;
KW anorectic; adiponectin; insulin.
XX OS Homo sapiens.
XX WO2003031640-A2.
XX 17-APR-2003.
XX 07-OCT-2002; 2002WO-US031635.
XX 06-OCT-2001; 2001US-0327650P.
XX 06-OCT-2001; 2001US-0327651P.
XX (BOST-) BOSTON MEDICAL CENT CORP.
XX Kirkland J, Tchkonja T;
XX WPI; 2003-421278/39.
XX DR N-PSDB; ACC44482.
XX New primary preadipocyte strain expressing telomerase reverse
PT transcriptase, useful in research applications, screening assays,
PT clinical applications, and in the administration of therapeutic agents,
PT particularly for obesity.
XX PS Disclosure; Page 13; 53pp; English.
XX

CC The invention relates to the generation of primary preadipocyte cell
CC strains that expresse telomerase reverse transcriptase (TERT- the
CC catalytic subunit of telomerase), and maintain and/or enhance replicative
CC potential and maintain adipogenic capacity of the cell. This sequence
CC represents the TERT protein. The cell strain can be used in research to
CC study all aspect of adipogenesis, especially in relation to researching
CC treatments for e.g. obesity. The cell can also be used to identify
CC adipogenesis modulators for use as therapeutic agents such as hormones,
CC growth factors, cytokines, enzymes, cholesterol binding proteins,
CC cholesterol removing proteins or their combinations. Alternatively, the
CC therapeutic agent may be an adipocytokine, preferably adiponectin, or
CC insulin
XX SQ Sequence 1132 AA;
Query Match 100.0%; Score 5961; DB 6; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRILGPOGWRLVORGDPAAFALVAQCILVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRILGPOGWRLVORGDPAAFALVAQCILVCVPW 60
Qy 61 DARPPPAAPSRQVSCSLKELVARVLQRLCERGAKNVLAFFGALLDGCAGGPEAFTTSVR 120
Db 61 DARPPPAAPSRQVSCSLKELVARVLQRLCERGAKNVLAFFGALLDGCAGGPEAFTTSVR 120
Qy 121 SYLNTVTTDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db 121 SYLNTVTTDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Qy 181 ATQARPPPHASGPRRRILGCERAWNHSVREAGVPLGLPAGARRRGGSSASRSILPKRPRR 240
Db 181 ATQARPPPHASGPRRRILGCERAWNHSVREAGVPLGLPAGARRRGGSSASRSILPKRPRR 240
Qy 241 GAAPERTPVQGSWAHPGRTGRGFCVSPARPAAEATSELEGALSSTRHSHPSVG 300
Db 241 GAAPERTPVQGSWAHPGRTGRGFCVSPARPAAEATSELEGALSSTRHSHPSVG 300
Qy 301 ROHAGPPSTSRPPRWDTPCPVYAEYKHFYSSGDEKQLRPSFLSSLPSTGARRL 360
Db 301 ROHAGPPSTSRPPRWDTPCPVYAEYKHFYSSGDEKQLRPSFLSSLPSTGARRL 360
Qy 361 VETIFLAGSRPMPGTPRRLPRLPORYQWMPRLFLLELLGNHAQCPYGVLLKTHCPRAAVT 420
Db 361 VETIFLAGSRPMPGTPRRLPRLPORYQWMPRLFLLELLGNHAQCPYGVLLKTHCPRAAVT 420
Qy 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSSPMQVYGFVFRACLRRLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSSPMQVYGFVFRACLRRLVPPGLWGS 480
Qy 481 RHNERRFLRNTKKEISLGKHAQLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERRFLRNTKKEISLGKHAQLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Qy 541 LAKEFLHLMMSVYVVELLRSFFYVTTTFQKNRLFYFKSVMSKLSQSIGIRHKLKRVQURE 600
Db 541 LAKEFLHLMMSVYVVELLRSFFYVTTTFQKNRLFYFKSVMSKLSQSIGIRHKLKRVQURE 600
Qy 601 LSEAEVQHREARPAALLTSRLRFTPKDGLRPIVNDYVVGARTFREKRAERLTSRVKA 660
Db 601 LSEAEVQHREARPAALLTSRLRFTPKDGLRPIVNDYVVGARTFREKRAERLTSRVKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAODPPPELVFVKVDVTGAYDTI 720
Qy 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHRKAFKSHVSTLTLQPYMRQFVAHL 780
Db 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHRKAFKSHVSTLTLQPYMRQFVAHL 780
Qy 781 QETSPLDADVIEQSSINASSGLFDVFLRECHHVRIRGKSYVQCQIPIGGSILSTL 840

Db 781 QETSPLRDVAVIVQSSSLNEASSGLFDVFLRFMCHHVRIRGKSYVQCQIPQSGIILSTL 840
Qy 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
Db 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
Qy 901 RKTWNPFVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSYARTSIRASLTF 960
Db 901 RKTWNPFVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSYARTSIRASLTF 960
Qy 961 NRGFKAGRNRRKLFVLRILKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Db 961 NRGFKAGRNRRKLFVLRILKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP 1020
Qy 1021 FHQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAIVQWLCHQAFLL 1080
Db 1021 FHQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAIVQWLCHQAFLL 1080
Qy 1081 KLTRHRVTVYVPLGLSLRTAQTQLSRKLPGTTLTALEAAANPALPSDFKTILD 1132
Db 1081 KLTRHRVTVYVPLGLSLRTAQTQLSRKLPGTTLTALEAAANPALPSDFKTILD 1132

RESULT 17

ADD21420
ID ADD21420 standard; protein; 1132 AA.
XX
AC ADD21420;
XX
DT 15-JAN-2004 (first entry)
XX
DE Human TERT protein related to continual cell growth.
XX
KW continual growth; cultured cell; cyclin dependent kinase; cdk4; cdk2;
KW cdk6; activating mutation; cell growth; cell division; cell cycle;
KW cancer-causing agent; continual growth-induced cell; enzyme; TERT;
KW telomerase; human.
XX
OS Homo sapiens.
XX
PN W02003044169-A2.
XX
PD 30-MAY-2003.
XX
PF 15-NOV-2002; 2002WO-US036729.
XX
PR 15-NOV-2001; 2001US-0334760P.
XX
PA (UTEM) UNIV TEMPLE.
XX
PI Reddy PE, Rane SG, Mettuss RV;
XX
DR WFI; 2003-449813/42.
XX

A composition for reversibly inducing continual growth in normal cells comprises a cyclin dependent kinase protein (e.g. cdk4, cdk2 or cdk6) or its active fragment, derivative, homolog or analog, having an activating mutation.

Claim 16; Page 135-138; 77pp; English.
XX
XX This invention relates to a novel composition for inducing a reversible state of a continual growth in cultured cells and comprises at least one compound comprising a cyclin dependent kinase (cdk)4, cdk2 or cdk6 protein having an activating mutation. Growth and division of living cells involve a regular series of events and processes that comprise the cell cycle. Cyclin dependent kinases cdk2, cdk4 and cdk6 are involved in the control of G1, the point at which cells irrevocably commit to DNA synthesis and thus enter the cell cycle. The invention is useful in reversing inducing continual growth in normal cells and may allow the screening of cancer-causing agents with the continual growth-induced cells. The present sequence is that of the human TERT protein, the catalytic subunit of telomerase, related to the invention. Note: Due to

CC an error in the specification or sequence listing, the Seq ID numbers given in the disclosure do not correspond to those given in the sequence listing. It is therefore unclear which Seq ID number corresponds to which CC sequence and exactly which sequence is being claimed.
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 7; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPAPRCRAVRSLLRSHYREVLFATFVRRLGPOGRLVORGDPAPAFRALVAOCLVCVPW 60
Db 1 MPAPRCRAVRSLLRSHYREVLFATFVRRLGPOGRLVORGDPAPAFRALVAOCLVCVPW 60
Qy 61 DARPPPAASFROVSCCLKELVARLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120
Db 61 DARPPPAASFROVSCCLKELVARLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120
Qy 121 SYLNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGFPLQLGA 180
Db 121 SYLNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGFPLQLGA 180
Qy 181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGGSASRSLPLKPRPR 240
Db 181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGGSASRSLPLKPRPR 240
Qy 241 GAAPERTPVGQGSWAHPGRTGSDRGFCVVSPARPAAEATSLGALSGTRHSHPSVG 300
Db 241 GAAPERTPVGQGSWAHPGRTGSDRGFCVVSPARPAAEATSLGALSGTRHSHPSVG 300
Qy 301 RQHAGPPPTSPPRPMDTPCPVYAEATHFLYSSGDKQOLRPSFLLSLSPSLTGARRL 360
Db 301 RQHAGPPPTSPPRPMDTPCPVYAEATHFLYSSGDKQOLRPSFLLSLSPSLTGARRL 360
Qy 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Db 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
Qy 421 PRAVCAREKPOGSVAAPREEDTDPRRLVOLLRQHSHPQVYGFVRACTLRRLVPPGLWGS 480
Db 421 PRAVCAREKPOGSVAAPREEDTDPRRLVOLLRQHSHPQVYGFVRACTLRRLVPPGLWGS 480
Qy 481 RHNERFLENTKFFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERFLENTKFFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Qy 541 LAKFLHLMSSVYVVELLSRFFVYVTTTFOKNRLFYRKSVWSKLQSIGIRQHLKRVOLRE 600
Db 541 LAKFLHLMSSVYVVELLSRFFVYVTTTFOKNRLFYRKSVWSKLQSIGIRQHLKRVOLRE 600
Qy 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKAEALTSRVKA 660
Db 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKAEALTSRVKA 660
Qy 661 LFSVLNTERARRPGLLGASVLGLDDIHRARWTFVLRAQDPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNTERARRPGLLGASVLGLDDIHRARWTFVLRAQDPPPELYFVKVDVTGAYDTI 720
Qy 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
Db 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
Qy 781 QETSPLRDVAVIVQSSSLNEASSGLFDVFLRFMCHHVRIRGKSYVQCQIPQSGIILSTL 840
Db 781 QETSPLRDVAVIVQSSSLNEASSGLFDVFLRFMCHHVRIRGKSYVQCQIPQSGIILSTL 840
Qy 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
Db 841 LCSLCYGDMMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
Qy 901 RKTWNPFVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSYARTSIRASLTF 960
Db 901 RKTWNPFVDEALGGTAFAVQMPAHGLFPMCGLLLDTRTLEVSQSDYSYARTSIRASLTF 960

Db 901 RKTVNVFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSYARTSIRASLTF 960
 QY 961 NRGFAGRNMRKLFGLRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRFHACVLQLP 1020
 Db 961 NRGFAGRNMRKLFGLRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRFHACVLQLP 1020
 QY 1021 FHOQWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHQAPLL 1080
 Db 1021 FHOQWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHQAPLL 1080
 QY 1081 KLTRHRVTVVPLGLSLRTAQQLSKLPCTTLTALAAANPALPSDFKTILD 1132
 Db 1081 KLTRHRVTVVPLGLSLRTAQQLSKLPCTTLTALAAANPALPSDFKTILD 1132

RESULT 18

ADH72743
 ID ADH72743 standard; protein; 1132 AA.
 AC ADH72743;
 XX
 XX
 DT 25-MAR-2004 (first entry)
 XX
 DE Human protein of the invention SEQ ID NO:19.
 XX
 KW stem cell; cardiant; hepatotropic; nephrotropic; cytotstatic; nontropic;
 KW neuroprotective; antiarthritic; antidiabetic; antiarteriosclerotic;
 KW heart failure; leukaemia; neurodegenerative disease; diabetes;
 KW arteriosclerosis; skeletal muscle; human.
 XX

OS Homo sapiens.

XX WO2003027281-A2.

PN 03-APR-2003.

FD 20-SEP-2002; 2002WO-JP009702.

PF 20-SEP-2001; 2001JP-00286332.

PR 09-MAY-2002; 2002JP-00133575.

XX (KYOW) KYOWA HAKKO KOGYO KK.

PA (TAMA/) TAMAKI T.

PA (ANDO/) ANDO K.

PI Tamaki T, Ando K, Akatsuka A, Nakamura Y, Hotta T, Sakurada K;

XX WPI; 2003-371925/35.

DR Pluripotent stem cells originating in skeletal muscle interstitial

XX tissue, useful in drugs for regenerating tissues and cells e.g. in

PT treating heart failure, leukemia, neurodegenerative diseases, and

PT diabetes.

XX Disclosure; SEQ ID NO 19; 29pp; Japanese.

PS The invention relates to novel pluripotent stem cells originating from a

XX skeletal muscle interstitial tissue. A cell of the invention has

CC cardiant, hepatotropic, nephrotropic, cytotstatic, nontropic,

CC neuroprotective, antiarthritic, antidiabetic, and antiarteriosclerotic

CC activity. The cells are useful in drugs for regenerating tissues and

CC cells e.g. in treating heart failure, leukaemia, neurodegenerative

CC diseases, diabetes and arteriosclerosis. The pluripotent stem cells

CC isolated from rat skeletal muscles after analysis of the various

CC components by culturing and staining, as well as by other biochemical

CC analysis. The present sequence is used in the exemplification of the

CC invention.

XX

Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 7; Length 1132;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLRSHRYREVLPPLATFVRRLLPQGWRLVORGDPAAFRALVAQCLVCVPM 60
 Db 1 MPAPRCRAVRSLRSHRYREVLPPLATFVRRLLPQGWRLVORGDPAAFRALVAQCLVCVPM 60
 QY 61 DARPPPAASFRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
 Db 61 DARPPPAASFRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
 QY 121 SYLPTNTVTDALRGSGANGLLLRVGDVLLVHLARCALFVLVAPSCAVQVCGPPLYQLGA 180
 Db 121 SYLPTNTVTDALRGSGANGLLLRVGDVLLVHLARCALFVLVAPSCAVQVCGPPLYQLGA 180
 QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGAPAGARRRRGGSSASRLPLPKRPR 240
 Db 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGAPAGARRRRGGSSASRLPLPKRPR 240
 QY 241 GAAPEPERTVQGSWAHPGTRGSDRGFCVWSPARPAEATSELEGALSSTRHSHPSVG 300
 Db 241 GAAPEPERTVQGSWAHPGTRGSDRGFCVWSPARPAEATSELEGALSSTRHSHPSVG 300
 QY 301 ROHHAGPESTSRPRPMDTPCPVVAETKHFYSSGDEQELRPSFLSSLRPSLTGARRL 360
 Db 301 ROHHAGPESTSRPRPMDTPCPVVAETKHFYSSGDEQELRPSFLSSLRPSLTGARRL 360
 QY 361 VETIFLGSRPWMPGTPRRLPRLPORYQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
 Db 361 VETIFLGSRPWMPGTPRRLPRLPORYQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
 QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVOLLROHSSPWQYGVFRACLRRLVPPGLWGS 480
 Db 421 PAAGVCAREKPGQSVAAPEEEDTDPRLVOLLROHSSPWQYGVFRACLRRLVPPGLWGS 480
 QY 481 RHNERRFLRNTKFI SLGKHA KLSQLBTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
 Db 481 RHNERRFLRNTKFI SLGKHA KLSQLBTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
 QY 541 LAKFLHLMWSVYVVELLRSFFYVTTETFOQNRLLFFRKYSVWSKLQSIGIRHQLKRVOLRE 600
 Db 541 LAKFLHLMWSVYVVELLRSFFYVTTETFOQNRLLFFRKYSVWSKLQSIGIRHQLKRVOLRE 600
 QY 601 LSEAEVQRHREARPA LLSRLRPIPKDGLRPIVNMDDYVVGARTFRREKRAE LRSRKA 660
 Db 601 LSEAEVQRHREARPA LLSRLRPIPKDGLRPIVNMDDYVVGARTFRREKRAE LRSRKA 660
 QY 661 LFSVLNFERARRPGLLGASVLGLDDIHRARWRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
 Db 661 LFSVLNFERARRPGLLGASVLGLDDIHRARWRTFVLRAQDPPPELYFVKVDVTGAYDTI 720
 QY 721 PQDLTEVIA SIIKPQNTYCVRRYAVVQKAAHGHVKA KFSHVSTLTDLPYMRQFVAHL 780
 Db 721 PQDLTEVIA SIIKPQNTYCVRRYAVVQKAAHGHVKA KFSHVSTLTDLPYMRQFVAHL 780
 QY 781 QETSPLRDADVIBQSSSLNEASSGLFDVFLRFMCHHAVIRKGSYVQCQGIPOGSI LSTL 840
 Db 781 QETSPLRDADVIBQSSSLNEASSGLFDVFLRFMCHHAVIRKGSYVQCQGIPOGSI LSTL 840
 QY 841 LCSLCYGD MENKLFAGIRRDG LLLRLVDDFLVTHLTHAKTFLRVLRGVPEYGC VVNL 900
 Db 841 LCSLCYGD MENKLFAGIRRDG LLLRLVDDFLVTHLTHAKTFLRVLRGVPEYGC VVNL 900
 QY 901 RKTVNVFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSYARTSIRASLTF 960
 Db 901 RKTVNVFVEDEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVSQSYARTSIRASLTF 960
 QY 961 NRGFAGRNMRKLFGLRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRFHACVLQLP 1020
 Db 961 NRGFAGRNMRKLFGLRLKCHSLFLDLQVNSLQVCTNLYKILLQAYRFHACVLQLP 1020
 QY 1021 FHOQWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHQAPLL 1080
 Db 1021 FHOQWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAAGPLPSEAVQWLCHQAPLL 1080

QY 1081 KLTHRVTVYVPLGSLRTAQQLSRKLPQTTLTALEAAANPALPSDFKTILD 1132
Db |||||||
1081 KLTHRVTVYVPLGSLRTAQQLSRKLPQTTLTALEAAANPALPSDFKTILD 1132

RESULT 19
ADG70114
ID ADG70114 standard; protein; 1132 AA.
XX
AC ADG70114;
XX
XX
DT 11-MAR-2004 (first entry)
XX
DE hTERT protein.
XX
XX
KW cytosolic; gene therapy; reverse transcriptase-inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX
OS Homo sapiens.
XX
XX WO2003095605-A2.
XX
XX
PD 20-NOV-2003.
XX
XX 14-APR-2003; 2003WO-EP003874.
XX
XX 08-MAY-2002; 2002US-0378820P.
XX
XX (PHAA) PHARMACIA ITAL SPA.
XX
XX Moll J, Schnuchel A, Stouten P;
PI
XX
XX WPI: 2004-012095/01.
DR N-PSDB; ADG70113.
XX
XX
PT New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX
XX
PS Example 1; SEQ ID NO 4; 141pp; English.
XX
CC The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to the
CC human TERT protein.
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 8; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches:1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGWRLVORGDPAPRALVAOCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGWRLVORGDPAPRALVAOCLVCVPW 60

QY 61 DARPPPAAPFRQVSCIKELVARVLQRLCERGAQNVLAFCFALLDARGGPPFAFTTSVR 120
Db 61 DARPPPAAPFRQVSCIKELVARVLQRLCERGAQNVLAFCFALLDARGGPPFAFTTSVR 120

QY 121 SYLPNTVTDALRSGGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLQLGA 180
Db 121 SYLPNTVTDALRSGGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLQLGA 180

QY 181 ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240
Db |||||||
181 ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRRGGSASRSLPLPKPRR 240

QY 241 GAAPEPERTVPGGQSWAHPORTRGPSDRGFCVVSPPAPAEATSEALSGTRHSHPSVG 300
Db |||||||
241 GAAPEPERTVPGGQSWAHPORTRGPSDRGFCVVSPPAPAEATSEALSGTRHSHPSVG 300

QY 301 RQHHAGPPSTSRPPRWDTPCPVYAETHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360
Db |||||||
301 RQHHAGPPSTSRPPRWDTPCPVYAETHFLYSSGDKQOLRPSFLLSSLRPSLTGARRL 360

QY 361 VETIFLGSRPMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGYLLKTHCPRAAVT 420
Db |||||||
361 VETIFLGSRPMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGYLLKTHCPRAAVT 420

QY 421 PAAGVCAREKPGQSVAAPBEEDTPRLVOLLQHSHPWQVYGFVRACLRLVPPGLWGS 480
Db |||||||
421 PAAGVCAREKPGQSVAAPBEEDTPRLVOLLQHSHPWQVYGFVRACLRLVPPGLWGS 480

QY 481 RHNERRFLNRTKKFISLGKHAHKLQBLTWKMSVRDCAWLRRSPGVGCPAAEHRLEEI 540
Db |||||||
481 RHNERRFLNRTKKFISLGKHAHKLQBLTWKMSVRDCAWLRRSPGVGCPAAEHRLEEI 540

QY 541 LAXFLHMLSVVYVVELLRSPFYVTETTFQKNRLFYRKSVMSKLQSIGIRQHLKRVLRE 600
Db |||||||
541 LAXFLHMLSVVYVVELLRSPFYVTETTFQKNRLFYRKSVMSKLQSIGIRQHLKRVLRE 600

QY 601 LSEAEVRQHREARPALLTSRLRFIPKPDGLRPIVNM DYVVGARTFRREKAERLTSRVKA 660
Db |||||||
601 LSEAEVRQHREARPALLTSRLRFIPKPDGLRPIVNM DYVVGARTFRREKAERLTSRVKA 660

QY 661 LFSVLANYERARRPGLLGASVLGDDIHRARWRTFVLRAODPPPELYFVKVDVTGAYDTI 720
Db |||||||
661 LFSVLANYERARRPGLLGASVLGDDIHRARWRTFVLRAODPPPELYFVKVDVTGAYDTI 720

QY 721 PQDLRTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
Db |||||||
721 PQDLRTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780

QY 781 QETSPLRDVAVIBQSSSLNEASSGLFDVFLRFCHHAAVIRGKSVYQCQIPQGSILSTL 840
Db |||||||
781 QETSPLRDVAVIBQSSSLNEASSGLFDVFLRFCHHAAVIRGKSVYQCQIPQGSILSTL 840

QY 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLAVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
Db |||||||
841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDFLAVTPHLTHAKTFLRTLVRGVPYGCVVNL 900

QY 901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTF 960
Db |||||||
901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPWCGLLDDTRTLEVSQSYSSYARTSIRASLTF 960

QY 961 NRGFKAGRNMRKLFQVLRKFKHSLFLDLQVNSLQTVCTNIIYKILLQAVRFHACVLQLP 1020
Db |||||||
961 NRGFKAGRNMRKLFQVLRKFKHSLFLDLQVNSLQTVCTNIIYKILLQAVRFHACVLQLP 1020

QY 1021 FHQQVWKNPTFFLRVLSDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHQAFLL 1080
Db |||||||
1021 FHQQVWKNPTFFLRVLSDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHQAFLL 1080

QY 1081 KLTHRVTVYVPLGSLRTAQQLSRKLPQTTLTALEAAANPALPSDFKTILD 1132
Db |||||||
1081 KLTHRVTVYVPLGSLRTAQQLSRKLPQTTLTALEAAANPALPSDFKTILD 1132

RESULT 20
ADG90599
ID ADG90599 standard; protein; 1132 AA.
XX
AC ADG90599;
XX
DT 25-MAR-2004 (first entry)
XX

DE Human TERT SEQ ID NO:2.
KW human; immune response; telomerase reverse transcriptase; TERT;
KW cytosolic; immunostimulant; cancer; cytotoxic T cell response.
OS Homo sapiens.
PN WO2004002408-A2.
XX 08-JAN-2004.
XX 24-JUN-2003; 2003WO-US019844.
PF 27-JUN-2002; 2002US-0393295P.
XX (GERO-) GERON CORP.
XX Majumdar A, Ferber IA, Frolikis M, Wang Z;
XX WPI; 2004-071946/07.
XX N-PSDB; ADG90598.
XX Eliciting an immune response in a mammal specific for its own telomerase
PT reverse transcriptase (TERT), useful for treating or preventing cancer,
PT comprises administering a composition containing TERT of another
PT mammalian species.
XX Claim 66; SEQ ID NO 2; 44pp; English.
XX The invention relates to a novel method for eliciting an immune response
CC in a mammalian subject that is specific for its own telomerase reverse
CC transcriptase (TERT), comprising administering an immunogenic composition
CC containing a protein with at least 20 consecutive amino acids of TERT of
CC another mammalian species, or a nucleic acid encoding the protein. A
CC composition of the invention has cytostatic, and immunostimulant
CC activity. The protein or the nucleic acid encoding the protein is useful
CC in the manufacture of a medicament for the treatment of cancer in a human
CC or for eliciting a cytotoxic T cell response in a human.
XX
SQ Sequence 1132 AA;

Query Match 100.0%; Score 5961; DB 8; Length 1132;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAQCLVCPW 60
DB 1 MPRAPCRVRSLLRSHYREVLPATFVRRLGQGWRLVQRGDPAAFRALVAQCLVCPW 60

QY 61 DARPPAPAFSPQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGARGGPEAFTTSVR 120
DB 61 DARPPAPAFSPQVSCLEKELVARVLQRLCERGAKNVLAFFGALLDGGARGGPEAFTTSVR 120

QY 121 SYLPNTVTDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
DB 121 SYLPNTVTDALRGSGAWGLLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPYQLGA 180

QY 181 ATQARPPPHASGRRRLGGERAWNSVREAGVPLGLPAPGARRRGSASRSPLPKRPRR 240
DB 181 ATQARPPPHASGRRRLGGERAWNSVREAGVPLGLPAPGARRRGSASRSPLPKRPRR 240

QY 241 GAAPEPERTPVQGGWAHPGRTGRSDRGFCVVSPPARPAEATSLGALSGRTHSHPSVG 300
DB 241 GAAPEPERTPVQGGWAHPGRTGRSDRGFCVVSPPARPAEATSLGALSGRTHSHPSVG 300

QY 301 ROHAGPPSTSRPPRPWDTPCPVVAETHYFYSSGDKQLRPSFLLSLRPSLTGARRL 360
DB 301 ROHAGPPSTSRPPRPWDTPCPVVAETHYFYSSGDKQLRPSFLLSLRPSLTGARRL 360

QY 361 VETIFLGRPMWPGTPRRRLPRLPQRYWQMRPLFLELGNHACQPYGVLLKTHCPLRAAVT 420
DB 361 VETIFLGRPMWPGTPRRRLPRLPQRYWQMRPLFLELGNHACQPYGVLLKTHCPLRAAVT 420

QY 421 PAAGVCAREKPOGSSVAAPEEDTDPRRLVOLLROHSSPMQVYGFVACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPOGSSVAAPEEDTDPRRLVOLLROHSSPMQVYGFVACLRRLVPPGLWGS 480
QY 481 RHNERFLRNTKKFISLKGAKLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLRESI 540
DB 481 RHNERFLRNTKKFISLKGAKLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLRESI 540
QY 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLFYFKRSVMSKLSQISIGIRQLKRVQRE 600
DB 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLFYFKRSVMSKLSQISIGIRQLKRVQRE 600
QY 601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRPIVNMDDYVVGARTFRREKAEARLSRVKA 660
DB 601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRPIVNMDDYVVGARTFRREKAEARLSRVKA 660
QY 661 LFSVLNYERARRPGLLGASVLGLDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNYERARRPGLLGASVLGLDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720
QY 721 PODRLTEVIASIIKPONTYCVRRYAVQKAAHGHVRKAFKSHVSTLTDLQPTMRQFVAHL 780
DB 721 PODRLTEVIASIIKPONTYCVRRYAVQKAAHGHVRKAFKSHVSTLTDLQPTMRQFVAHL 780
QY 781 QETSLRDAVVIQSSSLNEASSGLFDVFLRPMCHHAVIRGKSVVOCOGIPOGSI STL 840
DB 781 QETSLRDAVVIQSSSLNEASSGLFDVFLRPMCHHAVIRGKSVVOCOGIPOGSI STL 840
QY 841 LCSLCYGDWENKLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYCVVNL 900
DB 841 LCSLCYGDWENKLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYCVVNL 900
QY 901 RKTVNVFVEDEALGCTAFVQMPAHLFPWCGLLDTRTLEVSQSYSSYARTSIRASLTFF 960
DB 901 RKTVNVFVEDEALGCTAFVQMPAHLFPWCGLLDTRTLEVSQSYSSYARTSIRASLTFF 960
QY 961 NRGFKAGNMRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020
DB 961 NRGFKAGNMRRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020
QY 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
DB 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
QY 1081 KLTRHRVTYVLLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132
DB 1081 KLTRHRVTYVLLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132

RESULT 21
ADI82172
ID ADI82172 standard; protein; 1132 AA.
AC ADI82172;
XX 22-APR-2004 (first entry)
DT Human telomerase reverse transcriptase.
DE Human; embryonic stem cell; pluripotent stem cell; abnormal cell growth;
KW malignancy; differentiation.
XX Homo sapiens.
XX US2003224411-A1.
PN 04-DEC-2003.
XX 13-MAR-2003; 2003US-00388578.
PF 13-MAR-2003; 2003US-00388578.
PR (STAN/) STANTON L W.
XX PA

PA (BRAN/) BRANDENBERGER R.
PA (GOLD/) GOLD J D.
PA (IRVI/) IRVING J M.
PA (MAND/) MANDALAM R.
PA (MOKM/) MOK M.
PA (SHEL/) SHELTON D.

PI Stanton LW, Brandenberger R, Gold JD, Irving JM, Mandalam R;
PI Mok M, Shelton D;

DR WPI; 2004-119701/12.

DR N-PSDB; ADI82171.

PT Assessing culture of undifferentiated primate pluripotent stem cells by
PT detecting expression of markers e.g., Zic family member 3, other than
PT human telomerase reverse transcriptase/octamer binding transcription
PT factor.

PS Claim 1; SEQ ID NO 2: 106pp; English.

The invention relates to assessing a culture of undifferentiated primate pluripotent stem cells (PPS, e.g. embryonic stem cells), involving detecting expression of markers (MR1) e.g. Zic family member 3 (ZIC3), as given in specification, other than human telomerase reverse transcriptase (hTERT) or octamer binding transcription factor (Oct)3/4, or a marker (MR2) such as crypto or podocalyxin-like protein and hTERT and/or Oct3/4 or second marker chosen from (MR2). Also included are maintaining (M2) pPS cells in a pluripotent state (involves causing them to express one of the following markers (MR3) at a higher level, FOXO1A, ZIC3, hypothetical protein FLJ20582, Forkhead box H1 (FOXH1), Zinc finger protein, Hsai12, KRAB-zinc finger protein SZF1-1 or zinc finger protein of cerebellum ZIC2, or any other marker (MR4) chosen from PHD protein of cerebellum kruppel-like zinc finger protein (ZNF300), etc., as given in the specification), causing pPS cells to differentiate into a particular tissue type by causing them to express one of the markers chosen from (MR3) or (MR4) (or markers chosen from GATA binding protein 3 (GATAV3), core promoter element binding protein (COPEB), etc., as given in the specification), maintaining pPS cells in a pluripotent state (involves culturing pPS cells or their progeny in the presence of a normally secreted protein that is encoded by a gene that down-regulated upon differentiation of human embryonic stem (hES) cells, chosen from Fibrillin 3 gene, hERT B gene, ZIC3 gene, SPHAI gene, etc., as given in the specification), causing pPS cells to differentiate (involves culturing pPS cells or their progeny in the presence of a normally secreted protein that is encoded by a gene that up-regulated upon differentiation of hES cells, chosen from p311 protein gene, Tax interaction protein 1 gene, KIA0853 protein gene, Keratin 19 (KRT 19) gene, etc., as given in the specification), causing an encoding sequence to be preferentially expressed in undifferentiated pPS cells, causing an encoding sequence to be preferentially expressed in differentiated cells, sorting (M4) differentiated cells from less differentiated cells (involves separating cells expressing a surface marker chosen from any one of MR1 from cells not expressing the marker), causing pPS cells to proliferate without differentiation, identifying genes that are up or down regulated during differentiation of pPS cells, and a kit (I) for assessing a culture of pPS cells by M1. The method (M1) is useful for assessing culture of undifferentiated primate pluripotent stem cells and for assessing the growth characteristics of a cell population. The cell population has been obtained by culturing cells from human blastocyst or from a human patient suspected of having a clinical condition related to abnormal cell growth. The method further involves determining whether the cell population is pluripotent from the marker expression and assessing whether the patient has a malignancy from the marker expression. The present sequence is a protein whose expression is down regulated in pluripotent stem cells.

Sequence 1132 AA;

Query Match	100.0%;	Score 5961;	DB 8;	Length 1132;
Best Local Similarity	100.0%;	Pred. No. 0;		
Matches 1132;	Conservative	0;	Mismatches	0;
Indels	0;			Gaps 0;

QY 1 MPAPRCRAVRSLRLSHYREVLPATFVRRLGPOGWRLVORGDPAAFRALVAQCLVCVPW 60

Db	1	MPRAPRCRAVRSLLRSHYREVLPLATEFVRGLFGQGNLVRGDPAPAFRALVAOCLVCVPW	60
Qy	61	DARPPAAPFRQVSCUKELVARVLQRLCBRGAKNVLAFGFALLDARGGPPPAFTTSVR	120
Db	61	DARPPAAPFRQVSCUKELVARVLQRLCBRGAKNVLAFGFALLDARGGPPPAFTTSVR	120
Qy	121	SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYVCGPPLYOLGA	180
Db	121	SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYVCGPPLYOLGA	180
Qy	181	ATQARPPHAGSPRRRLGGERANHNSVREAGVPLGLPAPGARBRGGSASRSLPLPKPRR	240
Db	181	ATQARPPHAGSPRRRLGGERANHNSVREAGVPLGLPAPGARBRGGSASRSLPLPKPRR	240
Qy	241	GAPEPERTVPGQGSWAHPGRTGPGSDRGFCVVSPPARPAEATSYLEGALSGTRHSPSVG	300
Db	241	GAPEPERTVPGQGSWAHPGRTGPGSDRGFCVVSPPARPAEATSYLEGALSGTRHSPSVG	300
Qy	301	ROHHAGPPSTSRPPRMDTPCPPVYAEKTHFLYSSGDKQELRPSFLSSLRPSLTGARRL	360
Db	301	ROHHAGPPSTSRPPRMDTPCPPVYAEKTHFLYSSGDKQELRPSFLSSLRPSLTGARRL	360
Qy	361	VETIFLGSRPWMPGTPRRLPRLPQRYWQMPRLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Db	361	VETIFLGSRPWMPGTPRRLPRLPQRYWQMPRLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Qy	421	PAAGVCAREXPQGSVAAPBEEDTPRRLVOLLRQHSPPWQYGFVRACLRLRVLPPGLWGS	480
Db	421	PAAGVCAREXPQGSVAAPBEEDTPRRLVOLLRQHSPPWQYGFVRACLRLRVLPPGLWGS	480
Qy	481	RHNERRELRNTKXFLSIGKHAKLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI	540
Db	481	RHNERRELRNTKXFLSIGKHAKLSQELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI	540
Qy	541	LAKPLHLMNSVYVVELLRSFFYTTFQKNRLFYRKSWSKLQSIGIQHLKRVOLRE	600
Db	541	LAKPLHLMNSVYVVELLRSFFYTTFQKNRLFYRKSWSKLQSIGIQHLKRVOLRE	600
Qy	601	LSAEVQREAREARPALLTSRLTFPKPDGLRPIVNMDDYVVGARTFREKKAERLTSRVKA	660
Db	601	LSAEVQREAREARPALLTSRLTFPKPDGLRPIVNMDDYVVGARTFREKKAERLTSRVKA	660
Qy	661	LFSVLNYERARRPCLLGASVLGLDDIHRAWRITFVLVRAQDPPPELVFKVDVTGAYDTI	720
Db	661	LFSVLNYERARRPCLLGASVLGLDDIHRAWRITFVLVRAQDPPPELVFKVDVTGAYDTI	720
Qy	721	PQRLTEVIASIIKPQNTYCVRYAVVQKAAHGHRKAPKSHVSTLTDLPYMRQFVAHL	780
Db	721	PQRLTEVIASIIKPQNTYCVRYAVVQKAAHGHRKAPKSHVSTLTDLPYMRQFVAHL	780
Qy	781	QETSPLRDVVIEQSSSLNEASSGLFDVFLRFWCHAVRIRGKSYVQCQIGPGSILSTL	840
Db	781	QETSPLRDVVIEQSSSLNEASSGLFDVFLRFWCHAVRIRGKSYVQCQIGPGSILSTL	840
Qy	841	LCSLCYGDMENKLFAGIRRDGLLLRLVDVDFLLVTPHLTHAKTFLRLTVRGVPYGCVVNL	900
Db	841	LCSLCYGDMENKLFAGIRRDGLLLRLVDVDFLLVTPHLTHAKTFLRLTVRGVPYGCVVNL	900
Qy	901	RKTVNFPVBEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVQSDSYSSYARTSIRASLTF	960
Db	901	RKTVNFPVBEALGGTAFVQMPAHGLFPWCGLLLDTRTLEVQSDSYSSYARTSIRASLTF	960
Qy	961	NRGFKAGRNMRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP	1020
Db	961	NRGFKAGRNMRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVLQLP	1020
Qy	1021	FHOQVKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAQVWLCHQAFLL	1080
Db	1021	FHOQVKNPFTFLRVISDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAQVWLCHQAFLL	1080
Qy	1081	KLTRHRYVYVPLLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSPFKTILD	1132

Db 1081 KLTRHRVTVVPLLGSLRTAQTOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132

RESULT 22
AAW61350

ID AAW61350 standard; protein; 1154 AA.

XX AC AAW61350;

XX AC AAW61350;

DT 25-MAR-2003 (revised)

DT 12-OCT-1998 (first entry)

XX DE Human telomerase protein 2 (TP2).

XX TP2; human; telomerase protein 2; cancer; AIDS; ageing; therapy.

XX OS Homo sapiens.

XX PN WO9821343-A1.

XX PD 22-MAY-1998.

XX PF 13-NOV-1997; 97WO-US021248.

XX PR 15-NOV-1996; 96US-00751189.

XX PR 11-JUN-1997; 97US-00873039.

XX PR 16-OCT-1997; 97US-00951733.

XX PA (AMGE-) AMGEN INC.

XX PA (AMGE-) AMGEN CANADA INC.

XX PI Harrington LA, Robinson MO;

XX PI WPI; 1998-297946/26.

XX DR N-PSDB; AAV27876.

XX PT New nucleic acid encoding human telomerase protein-2 - used for

PT regulating telomerase activity, e.g. for treating cancer or acquired

PT immune deficiency syndrome.

XX PS Claim 1e; Fig 9; 150pp; English.

XX CC This polypeptide comprises human telomerase protein 2 (TP2), a novel

CC protein of the telomerase complex. Its amino acid sequence was deduced

CC from a composite (see AAV27876) of isolated cDNA clones 32 (see AAV27872)

CC and TP2-15 (see AAV27875), obtained from a human colon tumour cell line

CC LIM1863 cDNA. Expressing TP2 in a cell is used to increase telomerase

CC activity and thus proliferation for treatment of e.g. HIV infection, AIDS

CC and ageing disorders, while expressing an inactive mutant of TP2 (or

CC molecule antisense to the gene) is used to decrease telomerase activity,

CC e.g. for treatment of cancer. TP2 polypeptides can also be used to screen

CC for agents that inhibit TP2 activity or its binding to TRIP1 (see

CC AAW61347) or telomerase RNA, potentially useful therapeutically, also to

CC raise specific antibodies useful in immunoassays and therapeutically as

CC inhibitors. Also contemplated are transgenic animals in which the TP2

CC gene has been inactivated or is overexpressed. TP2 polypeptides are

CC administered i.v., s.c. or orally, or they are delivered from engineered

CC cells or gene therapy vectors. (Updated on 25-MAR-2003 to correct PR

XX field.)

XX SQ Sequence 1154 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1154;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLRSHYREVLPPLATFVRRRLGPGQGWRLVQRGDPAAFRALVAQCLVCVPW 60

Db 23 MPAPRCRAVRSLRSHYREVLPPLATFVRRRLGPGQGWRLVQRGDPAAFRALVAQCLVCVPW 82

QY 61 DARPPPAAPSFRQVSLCKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEATTTSVR 120

Db 83 DARPPPAAPSFRQVSLCKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEATTTSVR 142

QY 121 SYLPNTVTDTALRSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPPLYQLGA 180

Db 143 SYLPNTVTDTALRSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPPLYQLGA 202

QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 240

Db 203 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 262

QY 241 GAAPEPERTPVQGSWAHPGTRGFSDRGF CVVSPARPAEATSLEGALSGTRHSHPSVG 300

Db 263 GAAPEPERTPVQGSWAHPGTRGFSDRGF CVVSPARPAEATSLEGALSGTRHSHPSVG 322

QY 301 ROHHAGPSTSRPPRPMDTFCPPVYAEAKHFLYSSGDKQLRPPSLLSLRSLTGARRL 360

Db 323 ROHHAGPSTSRPPRPMDTFCPPVYAEAKHFLYSSGDKQLRPPSLLSLRSLTGARRL 382

QY 361 VETIFLGSRPWMPGTFRRLPRLPQRYWQWRPLFLELLGNHQAQCPYGVLLKTHCPLRAAVT 420

Db 383 VETIFLGSRPWMPGTFRRLPRLPQRYWQWRPLFLELLGNHQAQCPYGVLLKTHCPLRAAVT 442

QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSSPMQVYGVFVRACLRRLVPPGLMGS 480

Db 443 PAAGVCAREKPGQSVAAPEEEDTDPRRLVQLLRQHSSPMQVYGVFVRACLRRLVPPGLMGS 502

QY 481 RHNERFLRNTKFFISLKGHAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREBI 540

Db 503 RHNERFLRNTKFFISLKGHAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREBI 562

QY 541 LAKFLHLMMSVYVVELLSRFFVTTTFQKRLFFYRKSVMKLSQSIGIRQHLKRVQLRE 600

Db 563 LAKFLHLMMSVYVVELLSRFFVTTTFQKRLFFYRKSVMKLSQSIGIRQHLKRVQLRE 622

QY 601 LSEAEVROHREARPAALTSRLRFTPKPDGLRPIVNMDYVVGARTFRREKRAERLTSRVKA 660

Db 623 LSEAEVROHREARPAALTSRLRFTPKPDGLRPIVNMDYVVGARTFRREKRAERLTSRVKA 682

QY 661 LFSVLNVERARRPGILLGASVLGLDDIHRAMETFVLVRQAQDPPPELYFVKVDVTGAYDTI 720

Db 683 LFSVLNVERARRPGILLGASVLGLDDIHRAMETFVLVRQAQDPPPELYFVKVDVTGAYDTI 742

QY 721 PQDRLETVIASIIKPNQTYCVRVAVVQAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780

Db 743 PQDRLETVIASIIKPNQTYCVRVAVVQAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 802

QY 781 QETSPLRDAVIEQSSSLNEASSGLFDVFLRPMCHHAVRIRGKSYVQCQGIPOQSILSTL 840

Db 803 QETSPLRDAVIEQSSSLNEASSGLFDVFLRPMCHHAVRIRGKSYVQCQGIPOQSILSTL 862

QY 841 LCSLCYGMENKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTFLRTLVRGPEYGCVNVL 900

Db 863 LCSLCYGMENKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTFLRTLVRGPEYGCVNVL 922

QY 901 RKTVVNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVSQSDSYSSYARTSIRASLTF 960

Db 923 RKTVVNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVSQSDSYSSYARTSIRASLTF 982

QY 961 NRGFKAGNMRRKLFGLVRLKCHSLFLLQVNSLQTVCTNIYKILLLOAYRPHACVLQLP 1020

Db 983 NRGFKAGNMRRKLFGLVRLKCHSLFLLQVNSLQTVCTNIYKILLLOAYRPHACVLQLP 1042

QY 1021 FHOQWKNPTFFLVRVISDTASLCYSILKAKNAGSLGKGAAGPLPSAVOMLCHQAFLL 1080

Db 1043 FHOQWKNPTFFLVRVISDTASLCYSILKAKNAGSLGKGAAGPLPSAVOMLCHQAFLL 1102

QY 1081 KLTRHRVTVVPLLGSLRTAQTOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1132

Db 1103 KLTRHRVTVVPLLGSLRTAQTOLSRKLPGLTTLTALEAAANPALPSDFKTILD 1154

RESULT 23
AAW47008
ID AAW47008 standard; protein; 1189 AA.

XX AAW47008;
AC 13-AUG-1998 (first entry)
DT Glutathione-S-transferase and hTERT fusion protein 8.
DE Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX Synthetic.
OS Homo sapiens.
XX Key Location/Qualifiers
FH Misc-difference 22..23
FT /note= "enterokinase cleavage site"
FT
XX GB2317891-A.
PN
XX
PD 08-APR-1998.
XX
XX 01-OCT-1997; 97GB-00020890.
XX
XX 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
XX 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
XX 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
XX 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
XX (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
PA
XX Cecch TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;
PI WPI; 1998-171633/16.
DR
XX
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX
XX Example 6; Page 234-235; 387pp; English.
XX
XX The present sequence represents a fusion protein from an example of the
CC present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
XX used in the new methods
SQ Sequence 1189 AA;

Query Match 100.0%; Score 5961; DB 2; Length 1189;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1132; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHYREVLPPLATFVRRRLPGQWRLVORGDPAAPRALVAOCLVCVPW 60
DB |||||
DB 58 MPRAPRCRAVRSLLRSHYREVLPPLATFVRRRLPGQWRLVORGDPAAPRALVAOCLVCVPW 117
QY 61 DAPPPAAPSFRVSCLELVARVQLRCLCERGAKNVLAFCFALLDGGGPPPAFTTSVR 120
DB |||||
DB 118 DAPPPAAPSFRVSCLELVARVQLRCLCERGAKNVLAFCFALLDGGGPPPAFTTSVR 177
QY 121 SYLPNTVTDALRSGGAWGLLRVDDVLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 180
DB |||||
DB 178 SYLPNTVTDALRSGGAWGLLRVDDVLVHLLARCALFVLVAPSCAYQVCGPPLYOLGA 237
QY 181 ATOARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGSASRLPLPKRPRR 240
DB |||||
DB 238 ATOARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGSASRLPLPKRPRR 297
QY 241 GAAPERTPVGQGSWAHPRTRGSDRGFCVVSAPAPAEATSLGALSGTSHSPSVG 300
DB |||||
DB 298 GAAPERTPVGQGSWAHPRTRGSDRGFCVVSAPAPAEATSLGALSGTSHSPSVG 357
QY 301 RQHHAGPPSTSRPRPMDTFCPPVYAEIKHFLYSSGDKQOLRPSFLLSLRPSLTGARRL 360
DB |||||
DB 358 RQHHAGPPSTSRPRPMDTFCPPVYAEIKHFLYSSGDKQOLRPSFLLSLRPSLTGARRL 417
QY 361 VETIFLGSRPMPGTPRRLPRLPQRYQWRPPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
DB |||||
DB 418 VETIFLGSRPMPGTPRRLPRLPQRYQWRPPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 477
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRLLVQLLRQHSPPQVYGFVRACTLRRLVPPGLWGS 480
DB |||||
DB 478 PAAGVCAREKPGQSVAAPEEDTDPRLLVQLLRQHSPPQVYGFVRACTLRRLVPPGLWGS 537
QY 481 RHNERFLRNTKKFISLGKHAKLSQLBTWMSVRDCAMLRRLRSPGVGCVPAAEHRLEEEI 540
DB |||||
DB 538 RHNERFLRNTKKFISLGKHAKLSQLBTWMSVRDCAMLRRLRSPGVGCVPAAEHRLEEEI 597
QY 541 LAKFLHMLSVVYVELLSRFFVYTTTFOQRNLFYFRKSVWSKLQSIGIROHLKRVOLRE 600
DB |||||
DB 598 LAKFLHMLSVVYVELLSRFFVYTTTFOQRNLFYFRKSVWSKLQSIGIROHLKRVOLRE 657
QY 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAELTSRVKA 660
DB |||||
DB 658 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAELTSRVKA 717
QY 661 LFSVLNVERARRPCLLGASVGLGDDIHRARWTEVLAVRAQDPPPELYFVKVDVTGAYDTI 720
DB |||||
DB 718 LFSVLNVERARRPCLLGASVGLGDDIHRARWTEVLAVRAQDPPPELYFVKVDVTGAYDTI 777
QY 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 780
DB |||||
DB 778 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHL 837
QY 781 QETSPLRDVAVIBOSSLINEASSGLFDVFLRFCHHAVIRIGKSYVQCQIPOGSIILSTL 840
DB |||||
DB 838 QETSPLRDVAVIBOSSLINEASSGLFDVFLRFCHHAVIRIGKSYVQCQIPOGSIILSTL 897
QY 841 LCSLCYGDMEKNI FAGIRRDGLLRVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
DB |||||
DB 898 LCSLCYGDMEKNI FAGIRRDGLLRVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 957
QY 901 RKTVMNFPVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVOQSDYSYVARTSIRASLTF 960
DB |||||
DB 958 RKTVMNFPVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVOQSDYSYVARTSIRASLTF 1017
QY 961 NRGFKAGRNMRRLFGVLRLLKCHSLFLDLQVNSLOQVCTNIYKILLQAYRFACVLQLP 1020
DB |||||
DB 1018 NRGFKAGRNMRRLFGVLRLLKCHSLFLDLQVNSLOQVCTNIYKILLQAYRFACVLQLP 1077
QY 1021 FHOQVWKNPTFFLRVLSDDTASLCYSTLKAKNAGMSIGAKGAAGPLPSEAVQWMLCHOAFL 1080
DB |||||
DB 1078 FHOQVWKNPTFFLRVLSDDTASLCYSTLKAKNAGMSIGAKGAAGPLPSEAVQWMLCHOAFL 1137
QY 1081 KLTRHRTVTVYVVLGSLRTAQTLQSRKLPGTTLTALEAAANPALPSDFKTLTD 1132

|||||
1138 KLTRHRTVYVLLGSLRTAQQLSRKLPGLTTLTALEAAANPALPSDFKTLTD 1189
RESULT 24
AAW47000
ID AAW47000 standard; protein; 1285 AA.
XX
AC AAW47000;
XX
DT 13-AUG-1998 (first entry)
XX
DE HIS tagged thioredoxin moiety and full length hTERT fusion protein.
XX
KW Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX
OS Synthetic.
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 119..120
FT Region /note= "enterokinase cleavage site"
FT /label= hTERT
FT /note= "full length human telomerase reverse
FT transcriptase"
XX
GB2317891-A.
XX
08-APR-1998.
XX
01-OCT-1997; 97GB-00020890.
XX
01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
(GERO-) GERON CORP.
(UYTE-) UNIV TECHNOLOGY CORP.
XX
Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB,
PI Andrews WH;
XX
WPI; 1998-171633/16.
XX
Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX
Example 6; Page 223; 387pp; English.
PS
XX
The present sequence represents a fusion protein from an example of the
CC present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of

CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods
XX
SQ Sequence 1285 AA;
Query Match 99.9%; Score 5955; DB 2; Length 1285;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 MPRAPRCAVRSLRSHREVLPPLATFVRRLPGQGRNLVQRGDPAAFRALVAQCLVCVPM 60
DB 154 MPRAPRCAVRSLRSHREVLPPLATFVRRLPGQGRNLVQRGDPAAFRALVAQCLVCVPM 213
QY 61 DARPPAAPSPFQVSCLEKELVARVQLRCERGAKNVLAFGFALLDGARGPPEAFTTSVR 120
DB 214 DARPPAAPSPFQVSCLEKELVARVQLRCERGAKNVLAFGFALLDGARGPPEAFTTSVR 273
QY 121 SYLPNTVTDALRGSGAWGLLRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 274 SYLPNTVTDALRGSGAWGLLRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 333
QY 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGGSASRSLPLKRPVR 240
DB 334 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGGSASRSLPLKRPVR 393
QY 241 GAAPPERTPVQGGSWAHPGRTGRGSDRGFCVSPARPAEATSLEGALSGTRHSHPSVG 300
DB 394 GAAPPERTPVQGGSWAHPGRTGRGSDRGFCVSPARPAEATSLEGALSGTRHSHPSVG 453
QY 301 ROHAGAPSTSRPPRPMDTPCPVYAEKHFYSSGDKQLRPSLLSLRSLTGARRL 360
DB 454 ROHAGAPSTSRPPRPMDTPCPVYAEKHFYSSGDKQLRPSLLSLRSLTGARRL 513
QY 361 VETIFLGSRPWMPGTPRRLPQRYQWMRPLFLELLGNHACQPCVGLLKTHCPRAAVT 420
DB 514 VETIFLGSRPWMPGTPRRLPQRYQWMRPLFLELLGNHACQPCVGLLKTHCPRAAVT 573
QY 421 PAAGVCAREKPGGSAVAPEEDTPRRLVQLLRHSSPWQYGVFVACLRRLRVLPPGLWGS 480
DB 574 PAAGVCAREKPGGSAVAPEEDTPRRLVQLLRHSSPWQYGVFVACLRRLRVLPPGLWGS 633
QY 481 RHNERFLRNTKFTSLGKHAKLSLOELTWKMSVPRDCAWLRSPGVCVPAEHLRBEI 540
DB 634 RHNERFLRNTKFTSLGKHAKLSLOELTWKMSVPRDCAWLRSPGVCVPAEHLRBEI 693
QY 541 LAKFLHLMMSVYVVELLSRFFYVTTETTFQKNRLFYRKSVMSKLSQSIGIRQHLKEVQLRE 600
DB 694 LAKFLHLMMSVYVVELLSRFFYVTTETTFQKNRLFYRKSVMSKLSQSIGIRQHLKEVQLRE 753
QY 601 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNMVYVVGARTPRRKRABRLTSRVKA 660
DB 754 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNMVYVVGARTPRRKRABRLTSRVKA 813
QY 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 720
DB 814 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRQAQDPPPELYFVKVDVTGAYDTI 873
QY 721 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVRKAFKSHVSTLTLDQPMRQFVAHL 780
DB 874 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVRKAFKSHVSTLTLDQPMRQFVAHL 933
QY 781 QETSPLRDADVIEQSSSLNEASSGLFDVFLRFMCHAVRIRKGSYVQCQGIPOQSILSTL 840
DB 934 QETSPLRDADVIEQSSSLNEASSGLFDVFLRFMCHAVRIRKGSYVQCQGIPOQSILSTL 993
QY 841 LCSLCYGDMEKNLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGPEYGCVVNL 900
DB 994 LCSLCYGDMEKNLFAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGPEYGCVVNL 1053
QY 901 RKTWNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTRTLEVQSDYSYARTSTRASLTFF 960

Db 1054 RKTVMNPPVDEALGGTAFAVQMPAHGLFPWCGLLDTRTILEVQSDYSSYARTSIRASLTF 1113
Qy 961 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Db 1114 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1173
Qy 1021 FHOQVKNPTFFLRVISDTSASLSYILKAKNAGMSLGAKGAAGPLPSEAVQWICHQAFLL 1080
Db 1174 FHOQVKNPTFFLRVISDTSASLSYILKAKNAGMSLGAKGAAGPLPSEAVQWICHQAFLL 1233
Qy 1081 KLTRHRVTYVPLLSLRTAQTOLSRKLPCTTLTALEAANPALPSPDKTILD 1132
Db 1234 KLTRHRVTYVPLLSLRTAQTOLSRKLPCTTLTALEAANPALPSPDKTILD 1285

RESULT 25

AAW71376
ID AAW71376 standard; protein; 1132 AA.

AC AAW71376;

XX 04-DEC-1998 (first entry)

XX Human telomerase catalytic subunit referred to as hEST2.

XX Catalytic subunit; human; telomerase; telomere maintenance; diagnosis;
KW treatment; cancer.

XX Homo sapiens.

XX WO9837181-A2.

XX 27-AUG-1998.

XX 20-FEB-1998; 98WO-US003404.

XX 20-FEB-1997; 97US-0038750P.

XX 20-MAY-1997; 97US-0047151P.

XX 01-AUG-1997; 97US-0054549P.

XX 14-AUG-1997; 97US-0055762P.

XX 30-OCT-1997; 97US-0064322P.

XX (WHED) WHITEHEAD INST BIOMEDICAL RES.

XX Counter CM, Meyerson M, Weinberg RA;

XX WPI; 1998-495367/42.
XX N-PSDB; AAV60320.

XX New isolated human telomerase catalytic sub-unit gene - used to develop

XX products for increasing or reducing the life span of cells such as cancer

XX cells or transformed cells.

XX Claim 5; Fig 6; 96pp; English.

XX The present sequence represents the catalytic subunit of a human
XX telomerase holoenzyme. Disruption of the telomerase gene alters telomere
XX maintenance. The DNA is essential for telomerase activity, and the
XX protein is physically associated with telomerase and a constituent of
XX active telomerase complex. The products can be used for increasing or
XX reducing the lifespan of cells such as cancer cells or transformed cells.
XX They can also be used in the diagnosis and treatment of malignancies. In
XX addition, cells with a longer lifespan can be transplanted into or
XX grafted onto an individual (e.g. as skin grafts, as systems for delivery
XX of therapeutic proteins, such as hormones and enzymes), to whom they
XX provide therapeutic benefit

XX Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 2; Length 1132;

Best Local Similarity 99.9%; Pred. No. 0;

Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MPRAPCRVRSLLRSHYREVLPATFVRRRLGQGNRLVQRGDPAAFRALVAOCLVCVPW 60
Db 1 MPRAPCRVRSLLRSHYREVLPATFVRRRLGQGNRLVQRGDPAAFRALVAOCLVCVPW 60
Qy 61 DARPPAAPSFRVSCIKELVARVLOLRCERGAKNVLAFCFALLDARGGPPFAFTTSVR 120
Db 61 DARPPAAPSFRVSCIKELVARVLOLRCERGAKNVLAFCFALLDARGGPPFAFTTSVR 120
Qy 121 SYLPTNTVTDALRSGGAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLYLQGA 180
Db 121 SYLPTNTVTDALRSGGAWGLLLRRVGDVLLVHLLARCALFVLVAPSCAYQVCGPPLYLQGA 180
Qy 181 ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGGSASLSLPLPKRPRR 240
Db 181 ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGGSASLSLPLPKRPRR 240
Qy 241 GAAPERTPVGQGSWAHPGRTGSDRGFCVVSPARPABEATSLBGALSJGTRHSHPSVG 300
Db 241 GAAPERTPVGQGSWAHPGRTGSDRGFCVVSPARPABEATSLBGALSJGTRHSHPSVG 300
Qy 301 ROHHAGPPSTSRPRPMDTPCPVYAEKHFLYSSGDKEQLRPSFLLSSLRPSLTGARRL 360
Db 301 ROHHAGPPSTSRPRPMDTPCPVYAEKHFLYSSGDKEQLRPSFLLSSLRPSLTGARRL 360
Qy 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGYLLKTHCPRAAVT 420
Db 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGYLLKTHCPRAAVT 420
Qy 421 PAAGVCAREKPGQSVAAPEEEDTPRRLVOLLROHSSPWQVYGFVRACLRRLVPPGLWGS 480
Db 421 PAAGVCAREKPGQSVAAPEEEDTPRRLVOLLROHSSPWQVYGFVRACLRRLVPPGLWGS 480
Qy 481 RHNERFLRNTKKFISLGKHAHLSLOBLTWKMSVRDCAMLRSPGVGCVPAAEHRLREEI 540
Db 481 RHNERFLRNTKKFISLGKHAHLSLOBLTWKMSVRDCAMLRSPGVGCVPAAEHRLREEI 540
Qy 541 LAKFLHMLSVVYVVELLSFFVYTTTTFQKNRLLFFYRKSVMSKLQSIGIRQHLKRVLRE 600
Db 541 LAKFLHMLSVVYVVELLSFFVYTTTTFQKNRLLFFYRKSVMSKLQSIGIRQHLKRVLRE 600
Qy 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFREKRAERLTSRKA 660
Db 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFREKRAERLTSRKA 660
Qy 661 LFSVLNVERARRPGLLGASVLGLDDITHRAWRTFVLRAODPPPELYFVKVDVTGAYDTI 720
Db 661 LFSVLNVERARRPGLLGASVLGLDDITHRAWRTFVLRAODPPPELYFVKVDVTGAYDTI 720
Qy 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDQPYMRQFVAHL 780
Db 721 PQDLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDQPYMRQFVAHL 780
Qy 781 QETSPLRDVAVIIOSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYQCGIIPGSSILSTL 840
Db 781 QETSPLRDVAVIIOSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYQCGIIPGSSILSTL 840
Qy 841 LCSLCYGDMEKLFAGIRDDGLLLRLVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Db 841 LCSLCYGDMEKLFAGIRDDGLLLRLVDVDFLLVTPHLLTHAKTFLRTLVRGVPYGCVVNL 900
Qy 901 RKTVMNPPVDEALGGTAFAVQMPAHGLFPWCGLLDTRTILEVQSDYSSYARTSIRASLTF 960
Db 901 RKTVMNPPVDEALGGTAFAVQMPAHGLFPWCGLLDTRTILEVQSDYSSYARTSIRASLTF 960
Qy 961 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Db 961 NRGFKAGRNMRRLKFGVLRKCHSLFDLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
Qy 1021 FHOQVKNPTFFLRVISDTSASLSYILKAKNAGMSLGAKGAAGPLPSEAVQWICHQAFLL 1080
Db 1021 FHOQVKNPTFFLRVISDTSASLSYILKAKNAGMSLGAKGAAGPLPSEAVQWICHQAFLL 1080
Qy 1081 KLTRHRVTYVPLLSLRTAQTOLSRKLPCTTLTALEAANPALPSPDKTILD 1132

Db 1081 KLTRHRVTVYVLLGSLRTAQQLSRKLPGLTTLTALEAANPALPSDFKTLTD 1132
RESULT 26
AAV00627
XX ID AAY00627 standard; protein; 1132 AA.
XX AC AAY00627;
XX DT 26-JUL-1999 (first entry)
XX DE Human telomerase protein sequence.
XX KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX OS Homo sapiens.
XX PN WO9901560-A1.
XX PD 14-JAN-1999.
XX PE 01-JUL-1998; 98WO-US013835.
XX PR 01-JUL-1997; 97US-0051410P.
XX PR 21-JUL-1997; 97US-0053018P.
XX PR 21-JUL-1997; 97US-0053329P.
XX PR 04-AUG-1997; 97US-0054642P.
XX PR 09-SEP-1997; 97US-0058287P.
XX PA (CMB-) CAMBIA BIOSYSTEMS LLC.
XX PI Kilian A, Bowtell D;
XX WPI; 1999-106060/09.
XX N-PSDB; AAX18254.
XX New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX Claim 19; Fig 1; 134pp; English.
XX This sequence is the human telomerase of the invention. Primers that
CC amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury
XX Sequence 1132 AA;
Query Match 99.9%; Score 5954; DB 2; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRLSHREVLPATFVRRLGPGQWRLVORGDPAAFALVAQCLVCVPW 60
Db 1 MPRAPRCRAVRLSHREVLPATFVRRLGPGQWRLVORGDPAAFALVAQCLVCVPW 60
QY 61 DARPPAAPSPROVSCLELVARVLQRLCERGAKNVLAFGFALLDQARGPPEAFTTSVR 120

ID AAY00638 standard; protein; 1132 AA.
AC AAY00638;
DT 26-JUL-1999 (first entry)
XX Truncated telomerase protein sequence.
DE
XX Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilms tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
XX WO9901560-A1.
PN
XX
PD 14-JAN-1999.
XX
XX 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
XX (CAMB-) CAMBIA BIOSYSTEMS LLC.
PA
XX
XX Kilian A, Bowtell D;
PI
XX
XX WPI; 1999-106060/09.
DR N-PSDB; AAX18266.
XX
XX New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
PT
XX
XX Claim 4; Fig 11f-i; 134pp; English.
XX
XX This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilms
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury
XX
SQ Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 2; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPRAPCRVRSLLRSHYREVLPLATFVRRLGPGQWRLVORGDPAAFRALVAOCLVCVPW 60
DB 1 MPRAPCRVRSLLRSHYREVLPLATFVRRLGPGQWRLVORGDPAAFRALVAOCLVCVPW 60

QY 61 DARPPPAAPSFRQVSCIKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120
DB 61 DARPPPAAPSFRQVSCIKELVARVLQRLCERGAKNVLAFGFALLDARGGPPPAFTTSVR 120

QY 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180

QY 181 ATQAREPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGGSSAKSLPLPKRPRR 240
DB 181 ATQAREPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGGSSAKSLPLPKRPRR 240

QY 241 GAAPERTPVGSGWAHFGTRGSDRGFCVVSPPAPABEATSLGALSCTRHSHPSVG 300
DB 241 GAAPERTPVGSGWAHFGTRGSDRGFCVVSPPAPABEATSLGALSCTRHSHPSVG 300

QY 301 RQHAGPPPTSPPRPPDPTPCPPVYAEATHKFLYSSGDKQLRPSFTLLSLRPSLTGARRL 360
DB 301 RQHAGPPPTSPPRPPDPTPCPPVYAEATHKFLYSSGDKQLRPSFTLLSLRPSLTGARRL 360

QY 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGLKTKHCPRAAVT 420
DB 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGLKTKHCPRAAVT 420

QY 421 PAAGVCAREKPGSGVAAPEEEDTDPRLVQLLRQHSSPMQVYGFVRACTRLRLVPPGLWGS 480
DB 421 PAAGVCAREKPGSGVAAPEEEDTDPRLVQLLRQHSSPMQVYGFVRACTRLRLVPPGLWGS 480

QY 481 RHNERPFLNTKKFISLGHAKLSLOELTWKMSVRDCAWLRBSPGVCVPAEHRLEEEI 540
DB 481 RHNERPFLNTKKFISLGHAKLSLOELTWKMSVRDCAWLRBSPGVCVPAEHRLEEEI 540

QY 541 LAKFLHMLSVVYVELLRSGFFVYVTTTFOKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE 600
DB 541 LAKFLHMLSVVYVELLRSGFFVYVTTTFOKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE 600

QY 601 LSEAEVROHREARPPALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAEHLTSRVKA 660
DB 601 LSEAEVROHREARPPALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAEHLTSRVKA 660

QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRARWRTFLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRPGLLGASVLGLDDIHRARWRTFLVRAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PDRLTEVIASIIKPONTYCVRRYAVVQAAHGHVKAFAKSHVSTLTDLPYMRQFVAHL 780
DB 721 PDRLTEVIASIIKPONTYCVRRYAVVQAAHGHVKAFAKSHVSTLTDLPYMRQFVAHL 780

QY 781 QETSPURDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYQCGIPQGSILSTL 840
DB 781 QETSPURDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVYQCGIPQGSILSTL 840

QY 841 LCSLCYGDMEKLFAGIRRDGILLRLVDDFLLVTPHLTHAKTFLRLVRGVPYGCVVNL 900
DB 841 LCSLCYGDMEKLFAGIRRDGILLRLVDDFLLVTPHLTHAKTFLRLVRGVPYGCVVNL 900

QY 901 RKTVMNFPVEDEALGQTAFOVMPAHGLFPWCGLLLDTRTLEVQSDYSSVARTSIRASLTF 960
DB 901 RKTVMNFPVEDEALGQTAFOVMPAHGLFPWCGLLLDTRTLEVQSDYSSVARTSIRASLTF 960

QY 961 NRGFKAGRNRRKLFQVLRKCHSLFDLQVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020
DB 961 NRGFKAGRNRRKLFQVLRKCHSLFDLQVNSLQTVCTNIYKILLQAYRFHACVQLQP 1020

QY 1021 FHOQWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKAAGPLSEAVOMLCHQAFLL 1080
DB 1021 FHOQWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKAAGPLSEAVOMLCHQAFLL 1080

QY 1081 KLTRHRVTVPVLLGSLRTAQTOLSRKLPGLTTLTALEAANPALPSPFKTILD 1132
DB 1081 KLTRHRVTVPVLLGSLRTAQTOLSRKLPGLTTLTALEAANPALPSPFKTILD 1132

RESULT 28
AAY28401
ID AAY28401 standard; protein; 1132 AA.
XX
AC AAY28401;
XX
DT 22-SEP-1999 (first entry)

XX Human EST2 protein sequence.

DE EST2; proliferative capacity; cellular proliferation; decubitus ulcer;

XX telomerase-activating therapeutic agent; cell life-span extension;

KW vena disease; venous stasis ulcer; excessive pressure; arterial ulcer;

KW tissue regeneration enhancer; atherosclerosis; therapy.

XX Homo sapiens.

XX WO9935243-A2.

PN 15-JUL-1999.

XX 12-JAN-1999; 99WO-US000682.

PF 12-JAN-1998; 98US-0071220P.

PR 13-JAN-1998; 98US-0071455P.

PR 21-APR-1998; 98US-00063657.

XX (COLD-) COLD SPRING HARBOR LAB.

FA Hannon GJ, Wang J, Beach DH;

XX WPI; 1999-444196/37.

XX N-PSDB; AAX89424.

PT Increasing proliferative capacity of cells useful for promoting wound

PT healing.

XX Claim 3; Page 65-70; 73pp; English.

PS This sequence is the human EST2 protein, and can be used in the method of

CC the invention. The method is for increasing the proliferative capacity of

CC cells, and comprises contacting the cell with a telomerase-activating

CC therapeutic agent (TATA). The method can be used for extending the life-

CC span of cells, e.g. by increasing the number of mitotic divisions. They

CC can be used for e.g. the extension of skin or other epithelial cell

CC cultures or grafts, the expansion of mesenchymal cell cultures or grafts,

CC and the expansion of chondrocyte or osteocyte cultures or grafts. They

CC can be applied to e.g. neuronal, haematopoietic, epithelial, pancreatic,

CC hepatic, chondrocytic and osteocytic stem and progenitor cells in in

CC vivo, in vitro or ex vivo protocols. The methods can be used for

CC promoting the healing of wounds resulting from e.g. surgery, burns,

CC inflammation or irritation or ulcers resulting from e.g. venous disease

CC (venous stasis ulcers), excessive pressure (decubitus ulcers) or arterial

CC ulcers. They can also be used to enhance tissue regeneration processes,

CC e.g. of the skin, hair and/or fingernails. They can also be used for

CC treating age-related conditions, e.g. atrophy of the skin through loss of

CC extracellular matrix homeostasis in dermal fibroblasts, age-related

CC macular degeneration caused by accumulation of lipofuscin and

CC downregulation of a neuronal survival factor in retinal pigmented

CC epithelial (RPE) cells, and atherosclerosis caused by loss of

CC proliferative capacity and overexpression of hypertensive and thrombotic

CC factors in endothelial cells. Expanded populations of normal or

CC genetically engineered rejuvenated cells could be used for autologous or

CC allogeneic cell and gene therapy. They can also be used for prolonging

CC the lifespan of a culture of normal cells or tissue being used to secrete

CC therapeutic or other commercially significant proteins and products

XX Sequence 1132 AA;

SQ Query Match 99.9%; Score 5954; DB 2; Length 1132;

Best Local Similarity 99.9%; Pred. No. 0;

Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPRAFCRAVRSLRSHREVLPATFVRRLGPQGRWLVQRGDPAARFALVAQCCLVCPW 60

DB 1 MPRAFCRAVRSLRSHREVLPATFVRRLGPQGRWLVQRGDPAARFALVAQCCLVCPW 60

QY 61 DARPPAPAPSPFQVSCLEKELVARVQLRCERGAKNVLAFFGALLDARGGPPFAFTTSVR 120

DB 61 DARPPAPAPSPFQVSCLEKELVARVQLRCERGAKNVLAFFGALLDARGGPPFAFTTSVR 120

QY 121 SYLPNTVTDALRGSGANGLLLRVGGDDVLVHLLARCALFVLVAPSCAYVQCQPPYQLGA 180

DB 121 SYLPNTVTDALRGSGANGLLLRVGGDDVLVHLLARCALFVLVAPSCAYVQCQPPYQLGA 180

QY 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPCARRRGGSASRSILPKRPRR 240

DB 181 ATQARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPCARRRGGSASRSILPKRPRR 240

QY 241 GAAPERTPVQGGSWAHFGRTRGSDRGFCVVSPARPAEAEATSLGALSCTRHSHPVSG 300

DB 241 GAAPERTPVQGGSWAHFGRTRGSDRGFCVVSPARPAEAEATSLGALSCTRHSHPVSG 300

QY 301 ROHAGPPSTSRPPRWDTPCPVVAETKHFLYSSGDKQLRPSFLLSLRPSLTGARL 360

DB 301 ROHAGPPSTSRPPRWDTPCPVVAETKHFLYSSGDKQLRPSFLLSLRPSLTGARL 360

QY 361 VETIFLGSRPMPGTFRRLPRLPQRYWQWRPLFELLLGNHACQPYGVLLKTHCPLRAAVT 420

DB 361 VETIFLGSRPMPGTFRRLPRLPQRYWQWRPLFELLLGNHACQPYGVLLKTHCPLRAAVT 420

QY 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVQLLRQHSPPQVYGFVRACLRRLVPPGLMGS 480

DB 421 PAAGVCAREKPOGSVAAPPEEDTDPRRLVQLLRQHSPPQVYGFVRACLRRLVPPGLMGS 480

QY 481 RHNERFLRNTKFTSLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREBI 540

DB 481 RHNERFLRNTKFTSLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREBI 540

QY 541 LAKFLHLMMSVYVVELLSRFFVTETTFQKRLFFYRKSVMSKLSQSIGIRHOLKRVQURE 600

DB 541 LAKFLHLMMSVYVVELLSRFFVTETTFQKRLFFYRKSVMSKLSQSIGIRHOLKRVQURE 600

QY 601 LSEAVRQHRERAPALLTSRLRFPKPDGLRPIVNMVYVVGARTFRREKRAERLTSRKA 660

DB 601 LSEAVRQHRERAPALLTSRLRFPKPDGLRPIVNMVYVVGARTFRREKRAERLTSRKA 660

QY 661 LFSVLNERRARRPGLLGASVLGLDDIHRAWTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720

DB 661 LFSVLNERRARRPGLLGASVLGLDDIHRAWTFVLRVRAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PDRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPMQFVAHL 780

DB 721 PDRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLQPMQFVAHL 780

QY 781 QETSPLRDADVIEOSSLSNEASSGLFDVFLRPMCHHAVIRKGSYVQCQIPQGSILSTL 840

DB 781 QETSPLRDADVIEOSSLSNEASSGLFDVFLRPMCHHAVIRKGSYVQCQIPQGSILSTL 840

QY 841 LCSLCYGDMEKLPAGIRRRDGLLLRLVDDFLVTPHLLTHAKTFLRTRVLRGVEYGCVVNL 900

DB 841 LCSLCYGDMEKLPAGIRRRDGLLLRLVDDFLVTPHLLTHAKTFLRTRVLRGVEYGCVVNL 900

QY 901 RKTVNVFVEDEALGGTAFVQMPAHGLFPMCGLLDTRTLEVSQDSYSSYARTSIRASLTF 960

DB 901 RKTVNVFVEDEALGGTAFVQMPAHGLFPMCGLLDTRTLEVSQDSYSSYARTSIRASLTF 960

QY 961 NRGFKAGNNRRKLFVGLRLKCHSLFDLVQNSIQVTCTNYIKILLIQARPHACVILQLP 1020

DB 961 NRGFKAGNNRRKLFVGLRLKCHSLFDLVQNSIQVTCTNYIKILLIQARPHACVILQLP 1020

QY 1021 FHQQVWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080

DB 1021 FHQQVWKNPTFFLRVSDTASLCYSILKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLL 1080

QY 1081 KLTRHRVTVYVPLGSLRTAQTLRSKLPGTTLTALAANAANPALPSDFKTILD 1132

DB 1081 KLTRHRVTVYVPLGSLRTAQTLRSKLPGTTLTALAANAANPALPSDFKTILD 1132

RESULT 29

AAY96566

ID AAY96566 standard; protein; 1132 AA.

XX
AC AAY96566;
XX DT 12-SEP-2000 (first entry)
XX DE hEST2, a human telomerase catalytic subunit homologue.
XX hEST2; telomerase; catalytic subunit; reverse transcriptase; life-span;
KW retinoblastoma; p53; tumour suppressor; inhibitor; arteriosclerosis;
KW proliferation; immortal; tumour therapy; macular degeneration;
KW activator. INK4.
XX
XX Homo sapiens.
OS
XX WO200031238-A2.
PN
XX
XX 02-JUN-2000.
PD
XX 24-NOV-1999; 99WO-US027907.
PF
XX 25-NOV-1998; 98US-0109891P.
PR
XX 17-FEB-1999; 99US-0120549P.
XX
XX (GENE-) GENETICA INC.
PA
XX
XX Hannon GJ, Beach DH;
PI
XX WPI; 2000-400055/34.
XX N-PSDB; AAA29388.
DR
XX
XX New method for increasing the proliferative capacity of cell lines
PT comprises administering agents reversibly activating telomerase activity
PT and reversibly inactivating Rb/INK4 and/or p53 pathways useful in
PT treating age related diseases.
PT
XX
XX Claim 14; Page 116-119; 123pp; English.
PS
XX
XX This protein, designated hEST2, is a human telomerase catalytic subunit
CC homologue of yeast Est2p and Euplotes p123. hEST2 is a member of the
CC reverse transcriptase family of enzymes. The invention concerns methods
CC and reagents for extending the life-span, e.g. the number of mitotic
CC divisions, of a cell. The method relies on activation of a telomerase
CC activity and inhibition of one or both of a retinoblastoma (Rb)/INK4
CC pathway or a p53 pathway. Phosphorylation of Rb by cyclin-dependent
CC kinases, cdk4 and cdk6, releases the cells into the division cycle.
CC Binding of INK4 family members, e.g. the tumour suppressor p16INK4a,
CC inhibits kinase activity and results in growth arrest. Rb inactivators
CC can selectively and reversibly inactivate an Rb/INK4 pathway, especially
CC an Rb/p16INK4a pathway. The oncoprotein MDM2 is a cellular inhibitor of
CC Rb/E2F function and the p53 tumour suppressor and can also be used in the
CC methods. Other molecules which can be used include cdk4 or cdk6 mutants.
CC In particular, a cdk4 mutant is one which differs from at one or more of
CC residues K22, R24, H95 and/or D97. Additional constructs include a
CC papilloma virus E7 protein, or other viral oncoprotein which bypasses Rb
CC and/or p53. Antisense constructs of the Rb and p16INK4a genes may also be
CC used. The methods are useful for increasing the proliferative capacity of
CC cells. The cells are subsequently of use in pharmaceutical and cosmetic
CC preparations used to treat conditions related to (premature) ageing, e.g.
CC macular degeneration and arteriosclerosis. The cells can also be used to
CC replace tumour cell lines in vitro and for studies on biochemical and
CC physiological aspects of growth and differentiation. Long lived
CC (immortal) cells could also be of use in the production of normal or
CC genetically engineered biotechnology products
XX
SQ Sequence 1132 AA;
Query Match 99.9%; Score 5954; DB 3; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Qy 1 MPRAPRCRAVRSLLRSHYREVLPLATFVRRLGPGWRLVQRGDPAPRALVAQCLVCVPW 60
Db 1 MPRAPRCRAVRSLLRSHYREVLPLATFVRRLGPGWRLVQRGDPAPRALVAQCLVCVPW 60

```

RESULT 30
ADC47061
ID ADC47061 standard; protein; 1132 AA.
XX
AC ADC47061;
XX
DT 18-DEC-2003 (first entry)
XX
DE Human TERT amino acid sequence #SEQ ID 2.
XX
XX Human; TERT; telomerase; antibody; reverse transcriptase; tumour;
XX
XX autoimmune disease; liver cancer.
XX
XX Homo sapiens.
XX
XX W02003054545-A1.
XX
XX 03-JUL-2003.
XX
XX 19-DEC-2002; 2002WO-JP013310.
XX
XX 21-DEC-2001; 2001JP-00390050.
XX
XX (MITS-) MITSUBISHI KAGAKU MEDICAL INC.
XX
XX (MURA/) MURAKAMI S.
XX
XX (KANE/) KANEKO S.
XX
XX Murakami S, Kaneko S, Masutomi K;
XX
XX WPI; 2003-569289/53.
XX
XX N-PSDB; ADC47060.
XX
XX Detecting anti-telomerase antibody for detecting tumors and autoimmune
XX disease.
XX
XX Example Examples; Page 36-41; 45pp; Japanese.
XX
XX The invention relates to a method for detecting an anti-telomerase
XX antibody. The method of the invention comprises reacting telomerase
XX producing protein and a fragment or complex of template RNA with anti-
XX telomerase antibody in a sample, and analysing the product. The
XX telomerase producing protein is preferably telomerase reverse
XX transcriptase, and the analysis method is preferably western blot. The
XX method can be used to detect for tumours and autoimmune disease. The
XX method can also be used for detecting liver cancer. The current sequence
XX represents the human TERT amino acid sequence.
XX
XX Sequence 1132 AA;
XX
Query Match 99.9%; Score 5954; DB 7; Length 1132;
Best Local Similarity 99.9%; Pred. No 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
XX
QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60
Dd 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60
XX
QY 61 DARPPPAASFQVSCIKELVARVQLRCLERGHAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
Dd 61 DARPPPAASFQVSCIKELVARVQLRCLERGHAKNVLAFGFALLDGAAGGPPPEAFTTSVR 120
XX
QY 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYOVCGPPLYQLGA 180
Dd 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYOVCGPPLYQLGA 180
XX
QY 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAFCARRRGSGASRSLPLPKRPRR 240
Dd 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAFCARRRGSGASRSLPLPKRPRR 240
XX
QY 241 GAAPEPERTVPGGSAWHGPRTRGSDRGFCVVSPPARPAEATSLEGALSGTRHSHPSVG 300
Dd 241 GAAPEPERTVPGGSAWHGPRTRGSDRGFCVVSPPARPAEATSLEGALSGTRHSHPSVG 300

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QY 301 ROHAGPPSTSRPPRWDTPCPVVAETKHFYSSGDKQELRPSFLLSLRPSLTGARRL 360
Dd 301 ROHAGPPSTSRPPRWDTPCPVVAETKHFYSSGDKQELRPSFLLSLRPSLTGARRL 360
XX
QY 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHACPCYGVLLKTHCPLRAAVT 420
Dd 361 VETIFLGSRPMPGTPRRLPRLPQRYWQMRPLFLELLGNHACPCYGVLLKTHCPLRAAVT 420
XX
QY 421 PAAGVCAREKPOGSAVAPEEEDTPRRLLVQLLRQHSPPQVYGFVRACLRRLRVPGLWGS 480
Dd 421 PAAGVCAREKPOGSAVAPEEEDTPRRLLVQLLRQHSPPQVYGFVRACLRRLRVPGLWGS 480
XX
QY 481 RHNERREFLNTKKFISLGKHAQLSQELTWKMSVRDCAWLRSPGVGCYPAAEHRLRESI 540
Dd 481 RHNERREFLNTKKFISLGKHAQLSQELTWKMSVRDCAWLRSPGVGCYPAAEHRLRESI 540
XX
QY 541 LAKFLHLMWSVYVVELLSRFFVYVTTTFOKNRLFFYRKSVMSKLOSIGIRQHLKRVQRE 600
Dd 541 LAKFLHLMWSVYVVELLSRFFVYVTTTFOKNRLFFYRKSVMSKLOSIGIRQHLKRVQRE 600
XX
QY 601 LSEAEVRQHREARPAALLTSRLRFPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660
Dd 601 LSEAEVRQHREARPAALLTSRLRFPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKA 660
XX
QY 661 LFSVLNYERARPPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
Dd 661 LFSVLNYERARPPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
XX
QY 721 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVKAFKSHVSTLTLDLPYMRQFVAHL 780
Dd 721 PODRLTEVIASIIKPQNTYCVRRYAVQKAAHGHVKAFKSHVSTLTLDLPYMRQFVAHL 780
XX
QY 781 QETSPLRDAVIEQSSSLNEASSGLFDVFLRPMCHHAVIRKSVYVQCGIPQGSILSTL 840
Dd 781 QETSPLRDAVIEQSSSLNEASSGLFDVFLRPMCHHAVIRKSVYVQCGIPQGSILSTL 840
XX
QY 841 LCSLCVGMENKLFAGIRRDGLLLRVDDELLVTPHLTHAKTFLRTLVRGVEYCVVNL 900
Dd 841 LCSLCVGMENKLFAGIRRDGLLLRVDDELLVTPHLTHAKTFLRTLVRGVEYCVVNL 900
XX
QY 901 RKTVVNFVEDEALGTAFAVQMPAHGLFPWCGLLDTRTLVEQSDYSYSSYARTSIRASLTF 960
Dd 901 RKTVVNFVEDEALGTAFAVQMPAHGLFPWCGLLDTRTLVEQSDYSYSSYARTSIRASLTF 960
XX
QY 961 NRGFKAGRMNRKLFGLVRLKCHSLFDLQVNSLQTVCTNYIKILLQAYRPHACVQLP 1020
Dd 961 NRGFKAGRMNRKLFGLVRLKCHSLFDLQVNSLQTVCTNYIKILLQAYRPHACVQLP 1020
XX
QY 1021 FHOQVWKNTPTFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHOAFLL 1080
Dd 1021 FHOQVWKNTPTFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHOAFLL 1080
XX
QY 1081 KLTRHRVTYVPLGLSLRTAQTLRSKLPFGTTLTALAAAANPALPSDFKTILD 1132
Dd 1081 KLTRHRVTYVPLGLSLRTAQTLRSKLPFGTTLTALAAAANPALPSDFKTILD 1132
XX
RESULT 31
ADE40482
ID ADE40482 standard; protein; 1132 AA.
XX
AC ADE40482;
XX
DT 29-JAN-2004 (first entry)
XX
DE Human telomerase reverse transcriptase (hTERT).
XX
XX Immortal porcine cell; telomerase reverse transcriptase; epithelial cell;
XX uterine endometrial glandular tissue; virus quantification;
XX virus production; porcine reproductive and respiratory syndrome virus;
XX PRRSV; toxicity evaluation; human; hTERT; enzyme.
XX
XX

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OS Homo sapiens.
PN WO2003077853-A2.
XX
PD 25-SEP-2003.
XX
PF 11-MAR-2003; 2003WO-US007526.
XX
PR 11-MAR-2002; 2002US-0363129P.
XX
PA (MINU) UNIV MINNESOTA.
XX
PI Farris JA, Foster DN, O'grady SM;
XX
DR WPI; 2003-779075/73.
DR N-PSDB; ADE40481.
XX
PT New immortal porcine cell comprising a polynucleotide encoding an
PT exogenous telomerase reverse transcriptase polypeptide, useful for
PT measuring the amount of virus in a sample or for evaluating toxicity of a
PT compound.
XX
PS Claim 4; SEQ ID NO 2; 42pp; English.
XX
CC The invention relates to immortal porcine cells comprising a
CC polynucleotide encoding an exogenous telomerase reverse transcriptase
CC (TERT). The invention also encompasses the method of making immortal
CC porcine cells, and the use of the immortal porcine cells for measuring
CC the amount of virus in a sample, producing a virus, and evaluating the
CC toxicity of a compound. The cells of the invention may be diploid or
CC aneuploid, and may be an epithelial cell obtained from uterine
CC endometrial glandular tissue. The exogenous telomerase reverse
CC transcriptase expressed by the cells of the invention is preferably human
CC telomerase reverse transcriptase (ADE40482). The immortal porcine cells
CC are useful for measuring an amount of a virus in a sample, producing a
CC virus (especially porcine reproductive and respiratory syndrome virus
CC (PRRSV)), or for evaluating toxicity of a compound. The present sequence
CC represents human telomerase reverse transcriptase (hTERT), which is
CC claimed for use in the immortal cells of the invention.
XX
SQ Sequence 1132 AA;

Query Match 99.9%; Score 5954; DB 7; Length 1132;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRLGQWRLVQRGDPAAFRALVAQCLVCVPW 60
DB 1 MPAPRCRAVRSLLRSHYREVLPATFVRLGQWRLVQRGDPAAFRALVAQCLVCVPW 60

QY 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAQNVLAQFALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFQVSCLEKELVARVLQRLCERGAQNVLAQFALLDARGGPPPEAFTTSVR 120

QY 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 121 SYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180

QY 181 ATQARPPPHASGPRRLGCRANVHVSREAGVPLGLPAPCARRRGGSASRLPLPRPRR 240
DB 181 ATQARPPPHASGPRRLGCRANVHVSREAGVPLGLPAPCARRRGGSASRLPLPRPRR 240

QY 241 GAAPPEPRTVPGQGSWAHPGRTGSDRGFCVVSPPAPAEATSLGALSGLTGRHSHPSVG 300
DB 241 GAAPPEPRTVPGQGSWAHPGRTGSDRGFCVVSPPAPAEATSLGALSGLTGRHSHPSVG 300

QY 301 ROHHAGPPSTSRPPRWDTPCPVYAEKTHFLYSSGDKQELRPSFLISSLRPSLTGARRL 360
DB 301 ROHHAGPPSTSRPPRWDTPCPVYAEKTHFLYSSGDKQELRPSFLISSLRPSLTGARRL 360

QY 361 VETIFLGSRPWMPGTPRRLLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGSRPWMPGTPRRLLPRLPQRYQWQMRPLFLELLGNHAQCPYGVLLKTHCPRAAVT 420

QY 421 PAAGVCAREKPGQGSVAAPBEEDTDPRRLVOLLRHSSPMQVYGFVRACTLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQGSVAAPBEEDTDPRRLVOLLRHSSPMQVYGFVRACTLRRLVPPGLWGS 480

QY 481 RHNERRPLNTKKFI SLGKHAKLSLOELTWKMSVRDCAWLRSPGVCVGPAAEHLRREEI 540
DB 481 RHNERRPLNTKKFI SLGKHAKLSLOELTWKMSVRDCAWLRSPGVCVGPAAEHLRREEI 540

QY 541 LAKFLHLMVSVVVELLRSPFYVTTTFOKNRLFYRKSVMSKLQSIGIRHQLKRVOLRE 600
DB 541 LAKFLHLMVSVVVELLRSPFYVTTTFOKNRLFYRKSVMSKLQSIGIRHQLKRVOLRE 600

QY 601 LSEAEVRQHREARPAALLTSRLRPIPKPDGLRPVNMNDYVVGARTFRREKAEALTSRVKA 660
DB 601 LSEAEVRQHREARPAALLTSRLRPIPKPDGLRPVNMNDYVVGARTFRREKAEALTSRVKA 660

QY 661 LFSVLNRYERARRPGLLGASVGLGDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNRYERARRPGLLGASVGLGDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PQDRLTEVIASIIKPONTYCVREYAVVOKAAHGHVKAFKSHVSTLTDLQPYMRQFVAHL 780
DB 721 PQDRLTEVIASIIKPONTYCVREYAVVOKAAHGHVKAFKSHVSTLTDLQPYMRQFVAHL 780

QY 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVIRIGKSYVQCQIPQGSILSTL 840
DB 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVIRIGKSYVQCQIPQGSILSTL 840

QY 841 LCSLCYGDMEKLFAGIRRDGILLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
DB 841 LCSLCYGDMEKLFAGIRRDGILLRLVDDFLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900

QY 901 RKTVMNPFVEDEALGCTAFVQWPAHGLFPWCGLLDTRTLEVOSSDYSSYARTSIRASLT 960
DB 901 RKTVMNPFVEDEALGCTAFVQWPAHGLFPWCGLLDTRTLEVOSSDYSSYARTSIRASLT 960

QY 961 NRGFKAGRNNRKLFGVLRKCHSLFDLQVNSLQVCTNIYKILLQAYRFHACVQLP 1020
DB 961 NRGFKAGRNNRKLFGVLRKCHSLFDLQVNSLQVCTNIYKILLQAYRFHACVQLP 1020

QY 1021 FHQVWKNPTFFLRLVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
DB 1021 FHQVWKNPTFFLRLVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080

QY 1081 KLTHRRVTYVPLIGSRTAQTQLSRKLPGTTLTALAAANPALPSDFKTILD 1132
DB 1081 KLTHRRVTYVPLIGSRTAQTQLSRKLPGTTLTALAAANPALPSDFKTILD 1132

RESULT 32
AAW56113
ID AAW56113 standard; protein; 1132 AA.
XX
AAW56113;
XX AC
XX XX
DT 13-AUG-1998 (first entry)
XX
DE Human telomerase reverse transcriptase protein refined sequence.
XX
KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX
OS Homo sapiens.
XX
PN GB2317891-A.
XX
PD 08-APR-1998.
XX
PF 01-OCT-1997; 97GB-00020890.
XX
PR 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.

PR 25-APR-1997; 97US-00846017.
 PR 06-MAY-1997; 97US-00851843.
 PR 09-MAY-1997; 97US-00854050.
 PR 14-AUG-1997; 97US-00911312.
 PR 14-AUG-1997; 97US-00912551.
 PR 14-AUG-1997; 97US-00915503.
 XX (GERO-) GERON CORP.
 PA (UYTE-) UNIV TECHNOLOGY CORP.
 XX
 PI Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
 PI Andrews WH;
 XX WPI; 1998-171633/16.
 DR N-PSDB; AAV22428.
 DR
 XX
 XX Pure and recombinant human Telomerase Reverse Transcriptase and its
 PT variants - are useful in the diagnosis, prognosis and treatment of cell
 PT proliferation conditions especially cancer and ageing.
 XX
 XX Example 1; Fig 74; 387pp; English.
 PS
 XX
 CC The present sequence represents human telomerase reverse transcriptase
 CC (hTERT), which is a ribonucleoprotein. The present invention also
 CC describes the following methods: (A) determining whether a test compound
 CC is a modulator of hTERT, by detecting the change in hTERT recombinant
 CC protein or polynucleotide, on administration of the compound; (B)
 CC preparation of recombinant telomerase by contacting a protein preparation
 CC of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or
 CC protein in a sample by binding a relevant probe to the sample and
 CC detecting the complex formed or in the case of RNA detection, amplifying
 CC the product and correlating the presence of complex or amplification
 CC product with presence of hTERT in the sample; and (D) increasing the
 CC proliferation of a vertebrate cell by increasing hTERT expression; and (E)
 CC the use of an agent that causes an increase in cell vertebrate cell
 CC proliferation to create a medicament that inhibits ageing. A protein
 CC preparation of hTERT and the polynucleotide encoding hTERT can be used in
 CC the manufacture of medicaments for inhibiting the effect of ageing or
 CC cancer. Inhibitors of telomerase activity can be used to treat conditions
 CC that are associated with high telomerase activity. A protein preparation
 CC of hTERT can also be used in the new methods
 XX
 SQ Sequence 1132 AA;
 Query Match 99.8%; Score 5952; DB 2; Length 1132;
 Best Local Similarity 99.8%; Pred. No. 0;
 Matches 1130; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
 QY 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCPW 60
 DB 1 MPAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCPW 60
 QY 61 DARPPAAPSFQVSCIKELVARVQLRGERGAKNVLAFGFALLDGAAGPPEAFTTSVR 120
 DB 61 DARPPAAPSFQVSCIKELVARVQLRGERGAKNVLAFGFALLDGAAGPPEAFTTSVR 120
 QY 121 SYLPTNTVTDALRGSGAWGLLRRVGDVLLHLLARCAFLVAPSCAYOVCGPPLYQLGA 180
 DB 121 SYLPTNTVTDALRGSGAWGLLRRVGDVLLHLLARCAFLVAPSCAYOVCGPPLYQLGA 180
 QY 181 ATOARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 240
 DB 181 ATOARPPPHASGPRRLGGERAWNHSVREAGVPLGLPAPGARRRGGSASRSPLPKRPRR 240
 QY 241 GAAPERTFVGCGSWAHGRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG 300
 DB 241 GAAPERTFVGCGSWAHGRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG 300
 QY 301 RQHAGPPSTSPRPDPTCPVVAETKHLYSSGDKQLRPSFLLSLSRLSGARRL 360
 DB 301 RQHAGPPSTSPRPDPTCPVVAETKHLYSSGDKQLRPSFLLSLSRLSGARRL 360
 QY 361 VETIFLGSRPWPGTTPRRLLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420

Db 361 VETIFLGSRPWPGTTPRRLLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
 QY 421 PAAGVCAREKPOGSAVAAPPEEDTDPRRLVQLLRQHSHPQVYGVFVRACLRRLLVPPGLWGS 480
 Db 421 PAAGVCAREKPOGSAVAAPPEEDTDPRRLVQLLRQHSHPQVYGVFVRACLRRLLVPPGLWGS 480
 QY 481 RNEERREFLNTKFFISLGHAKLSLOELTWKNSVDCAWLRRSPGVCVCPAAEHLRLREI 540
 Db 481 RNEERREFLNTKFFISLGHAKLSLOELTWKNSVDCAWLRRSPGVCVCPAAEHLRLREI 540
 QY 541 LAKFLHLMSSVYVVELLSRFFVYVTTTFOKNRLLFFYRKSVMKSLQSIGIRQHLKRVQLRE 600
 Db 541 LAKFLHLMSSVYVVELLSRFFVYVTTTFOKNRLLFFYRKSVMKSLQSIGIRQHLKRVQLRE 600
 QY 601 LSEAEVRQHREARPPALLTSRLRFPKPDGLRPIVNMVYVVGARTFRREKRAERLTSRVKA 660
 Db 601 LSEAEVRQHREARPPALLTSRLRFPKPDGLRPIVNMVYVVGARTFRREKRAERLTSRVKA 660
 QY 661 LFSVLNVERARRPGLLGASVGLGDDIHRAWRTFVLRAQDPPPPPELYFVKVDVTGAYDTI 720
 Db 661 LFSVLNVERARRPGLLGASVGLGDDIHRAWRTFVLRAQDPPPPPELYFVKVDVTGAYDTI 720
 QY 721 PODRLTEVIASIIKPNQTYCVRRYAVVQAAHGHVKAFKSHVSTLTDLQPYMRQFVAHL 780
 Db 721 PODRLTEVIASIIKPNQTYCVRRYAVVQAAHGHVKAFKSHVSTLTDLQPYMRQFVAHL 780
 QY 781 QETSPRLDAVIEQSSSLEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPQGSILSTL 840
 Db 781 QETSPRLDAVIEQSSSLEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPQGSILSTL 840
 QY 841 LCSLCYGMENKLFAGIRDDGLLLVDDFLLVTPHLTHAKTFLRTLVRGPEYGCVVNL 900
 Db 841 LCSLCYGMENKLFAGIRDDGLLLVDDFLLVTPHLTHAKTFLRTLVRGPEYGCVVNL 900
 QY 901 RKTVVNPFVEDEALGGTAFVQMPAGLFPWCGLLDTRTLLEVSQSYSSYARTSIRASLTF 960
 Db 901 RKTVVNPFVEDEALGGTAFVQMPAGLFPWCGLLDTRTLLEVSQSYSSYARTSIRASLTF 960
 QY 961 NRGFVAGNMRRKLPFVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRPHACVLQLP 1020
 Db 961 NRGFVAGNMRRKLPFVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRPHACVLQLP 1020
 QY 1021 FHQQVWKNPTFFLRVISDTASICYSLKAKNAGSLGAKGAGPLPSEAVOMLCHOAFLL 1080
 Db 1021 FHQQVWKNPTFFLRVISDTASICYSLKAKNAGSLGAKGAGPLPSEAVOMLCHOAFLL 1080
 QY 1081 KLTRHRVTYVPLGLSLRTAQTLRKLPGLTTLTALEAAANPALPSDFKTILD 1132
 Db 1081 KLTRHRVTYVPLGLSLRTAQTLRKLPGLTTLTALEAAANPALPSDFKTILD 1132
 RESULT 33
 AAY00647
 ID AAY00647 standard; protein; 1166 AA.
 XX
 AC AAY00647;
 XX
 DT 26-JUL-1999 (first entry)
 XX
 DE Telomerase (ver. 2) protein sequence.
 XX
 KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
 KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
 KW smooth muscle cell hyperplasia; stem cell proliferation; Wilms' tumour;
 KW stem cell differentiation; organ regeneration; organ differentiation.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FN WO9901560-A1.
 XX
 PD 14-JAN-1999.

XX PF 01-JUL-1998; 98WO-US013835.
XX PR 01-JUL-1997; 97US-0051410P.
XX PR 21-JUL-1997; 97US-0053018P.
XX PR 21-JUL-1997; 97US-0053329P.
XX PR 04-AUG-1997; 97US-0054642P.
XX PR 09-SEP-1997; 97US-0058287P.
XX PA (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX PI Kilian A, Bowtell D;
XX PI WPI; 1999-106060/09.
XX DR N-PSDB; AAX18275.
XX CC New isolated vertebrate telomerase genes - used to develop products for
XX PT treating cancers or for organ regeneration, nerve cell or brain cell
XX PT growth following injury or bone marrow transplantation.
XX PS Claim 4; Fig 11z-ac; 134pp; English.
XX CC This sequence is a truncated human telomerase of the invention. Primers
XX CC that amplify the telomerase coding sequence can be used in a method for
XX CC diagnosing cancer in a patient. The telomerase can be used for detection,
XX CC diagnosis and drug screening. Inhibitors of telomerase activity can be
XX CC used to treat cancers such as melanomas, other skin cancers,
XX CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
XX CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
XX CC growths. Enhancers of telomerase may be used to stimulate stem cell
XX CC proliferation and differentiation (expansion of haematopoietic stem cells
XX CC could be administered in the bone marrow transplant context). As well,
XX CC many tissues have stem cells. Proliferation of these cells may be useful
XX CC in wound healing, hair growth, treatment of disease such as Wilms
XX CC tumour, organ regeneration or differentiation after injury or diseases,
XX CC nerve cell or brain cell growth following injury
XX SQ Sequence 1166 AA;
Query Match 99.4%; Score 5927; DB 2; Length 1166;
Best Local Similarity 97.0%; Pred. No. 0;
Matches 1131; Conservative 0; Mismatches 1; Indels 34; Gaps 1;
QY 1 MPRAPCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60
DB 1 MPRAPCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAAPSFRQV-----SCLKELVARVLQ 86
DB 61 DARPPPAAPSFRQVGLPGVGVRLGLRAAGNQNHABSSAGDSGRPPRRSCLKELVARVLQ 120
QY 87 RLCERGAKNVLAAGFALLDARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLRRVGD 146
DB 121 RLCERGAKNVLAAGFALLDARGGPPPEAFTTSVRSYLPNTVTDALRGSGAWGLLRRVGD 180
QY 147 DVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQARPPPHASGPRRLGCERAWNHS 206
DB 181 DVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGAATQARPPPHASGPRRLGCERAWNHS 240
QY 207 VREAGVPLGLPAGARRRGGSASRSLLPKRPRRGAAPERTPVQGGSWAHFGRTRGPS 266
DB 241 VREAGVPLGLPAGARRRGGSASRSLLPKRPRRGAAPERTPVQGGSWAHFGRTRGPS 300
QY 267 DRGFCVVSAPARAEATSLGALSGRTRHSHPSVGRQHHAGPPSTSRPPRPWDTPCPPYVA 326
DB 301 DRGFCVVSAPARAEATSLGALSGRTRHSHPSVGRQHHAGPPSTSRPPRPWDTPCPPYVA 360
QY 327 ETHKFLYSSGDKEQLRPSFLLSRLPSLTGARELVETIFLGRSPWMPGTFRLLPLRPQRY 386
DB 361 ETHKFLYSSGDKEQLRPSFLLSRLPSLTGARELVETIFLGRSPWMPGTFRLLPLRPQRY 420
QY 387 WQMRPLFLELLGNHAQCYPYGVLLKTHCPLRAAAVTPAAGVCAREKPGQGSVAAPEEEDTDP 446

Db 421 WQMRPLFLELLGNHAQCYPYGVLLKTHCPLRAAAVTPAAGVCAREKPGQGSVAAPEEEDTDP 480
QY 447 RLVQLLRQHSSPWQYVGFVRACLRRLVPPGLWGSRHNRERFLRNTKKFISLKGAKLSIQ 506
Db 481 RLVQLLRQHSSPWQYVGFVRACLRRLVPPGLWGSRHNRERFLRNTKKFISLKGAKLSIQ 540
QY 507 ELTWKMSVRDCAWLRRSPGVCVPAAEHRLREBEIIAKFLHMLMSVYVVBELLSPFFVYVTT 566
Db 541 ELTWKMSVRGCAWLRRSPGVCVPAAEHRLREBEIIAKFLHMLMSVYVVBELLSPFFVYVTT 600
QY 567 TFQKNRLFFYRKSVMSKLSQIGIROHLKRVQLRELSEAEVROHREARPARPALLTSRLRFIPK 626
Db 601 TFQKNRLFFYRKSVMSKLSQIGIROHLKRVQLRELSEAEVROHREARPARPALLTSRLRFIPK 660
QY 627 PDGLRPIVNMDDYVGARTFRREKRAERLTSRVKALFSLVNLNYSERARRPGLLGASVLGLDDI 686
Db 661 PDGLRPIVNMDDYVGARTFRREKRAERLTSRVKALFSLVNLNYSERARRPGLLGASVLGLDDI 720
QY 687 HRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAV 746
Db 721 HRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAV 780
QY 747 VQKAAGHVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPLRDAVVIQSSSLNEASSGLF 806
Db 781 VQKAAGHVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPLRDAVVIQSSSLNEASSGLF 840
QY 807 DVFLRFMCHHAVIRGKSVQCOGIPQGSILSTLCSLCYGDENKLPAGIRRDGLLLRL 866
Db 841 DVFLRFMCHHAVIRGKSVQCOGIPQGSILSTLCSLCYGDENKLPAGIRRDGLLLRL 900
QY 867 VDDFLVTPHLTHAKTFLRTLVRGPEYGCVVNLRTVNVNPFVEDEALGGTAFVQMPAHG 926
Db 901 VDDFLVTPHLTHAKTFLRTLVRGPEYGCVVNLRTVNVNPFVEDEALGGTAFVQMPAHG 960
QY 927 LFPWCGLLDTRTLEVSQSDYSYARTSIRASITFNRGFKAGNMRRKLFGLVRLKCHSLF 986
Db 961 LFPWCGLLDTRTLEVSQSDYSYARTSIRASITFNRGFKAGNMRRKLFGLVRLKCHSLF 1020
QY 987 LDQVNSLQTVCTNIYKILLQAYRPHACVLQLPFHQQVWKNPFPFLRVISDTASLCYSI 1046
Db 1021 LDQVNSLQTVCTNIYKILLQAYRPHACVLQLPFHQQVWKNPFPFLRVISDTASLCYSI 1080
QY 1047 LKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLLKLTRHRVTYVPLGLSLRTAQTQLSRK 1106
Db 1081 LKAKNAGMSLGAKGAAGPLPSEAVQWLCHQAFLLKLTRHRVTYVPLGLSLRTAQTQLSRK 1140
QY 1107 LFGTTLTALAANAANPALPSDFKTILD 1132
Db 1141 LFGTTLTALAANAANPALPSDFKTILD 1166
RESULT 34
AAW56101
ID AAW56101 standard; protein; 1405 AA.
XX AC AAW56101;
XX DT 13-AUG-1998 (first entry)
XX DE Enhanced green fluorescent protein and hTERT fusion protein.
XX KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
XX OS cell proliferation; cancer; ageing; ribonucleoprotein.
XX OS Synthetic.
XX OS Homo sapiens.
XX FH Key
XX FT Location/Qualifiers
XX FT 1..250
XX FT /note= "enhanced green fluorescent protein fragment"
XX FT 276..1405
XX FT /note= "hTERT protein fragment"

PN GB2317891-A.
 XX PD 08-APR-1998.
 XX PF 01-OCT-1997; 97GB-00020890.
 XX PR 01-OCT-1996; 96US-00724643.
 PR 18-APR-1997; 97US-00844419.
 PR 25-APR-1997; 97US-00846017.
 PR 06-MAY-1997; 97US-00851843.
 PR 09-MAY-1997; 97US-00854050.
 PR 14-AUG-1997; 97US-00911312.
 PR 14-AUG-1997; 97US-00912951.
 PR 14-AUG-1997; 97US-00915503.
 XX (GERO-) GERON CORP.
 PA (UYTE-) UNIV TECHNOLOGY CORP.
 XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
 XX Andrews WH;
 XX WPI; 1998-171633/16.
 XX Pure and recombinant human Telomerase Reverse Transcriptase and its
 PT variants - are useful in the diagnosis, prognosis and treatment of cell
 PT proliferation conditions especially cancer and ageing.
 XX Example 15; Page 269-270; 387pp; English.
 XX The present sequence represents a fusion protein from an example of the
 CC present invention which describes human telomerase reverse transcriptase
 CC (hTERT). The present invention also describes the following methods: (A)
 CC determining whether a test compound is a modulator of hTERT, by detecting
 CC the change in hTERT recombinant protein or polynucleotide, on
 CC administration of the compound; (B) preparation of recombinant telomerase
 CC by contacting a protein preparation of hTERT with a telomerase RNA
 CC component; (C) detection of the hTERT RNA or protein in a sample by
 CC binding a relevant probe to the sample and detecting the complex formed
 CC or in the case of RNA detection, amplifying the product and correlating
 CC the presence of complex or amplification product with the presence of hTERT in
 CC the sample; and (D) increasing the proliferation of a vertebrate cell by
 CC increasing hTERT expression; and (E) the use of an agent that causes an
 CC increase in cell vertebrate cell proliferation to create a medicament
 CC that inhibits ageing. A protein preparation of hTERT and the
 CC polynucleotide encoding hTERT can be used in the manufacture of
 CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
 CC telomerase activity can be used to treat conditions that are associated
 CC with high telomerase activity. A protein preparation of hTERT can also be
 CC used in the new methods
 XX Sequence 1405 AA;
 SQ
 Query Match 99.3%; Score 5918; DB 2; Length 1405;
 Best Local Similarity 99.6%; Pred. No. 0;
 Matches 1128; Conservative 1; Mismatches 1; Indels 2; Gaps 2;
 QY 1 MPRAPRCRAVRSLLSHYREVLPATFVRRRLGPGQWRILVQRGDPAAFRALVAQCLVCPW 60
 Db 276 MPRAPRCRAVRSLLSHYREVLPATFVRRRLGPGQWRILVQRGDPAAFRALVAQCLVCPW 335
 QY 61 DARPPPAAPSPROVSCLELVARVLQRCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 120
 Db 336 DARPPPAAPSPROVSCLELVARVLQRCERGAKNVLAFFGALLDGGAGGPEAFTTSVR 395
 QY 121 SYLPTNTVDALRGSGAWGLLRRVDDVLVHLLARCALFVLVAPSCAVQVCGPPLYQLGA 180
 Db 396 SYLPTNTVDALRGSGAWGLLRRVDDVLVHLLARCALFVLVAPSCAVQVCGPPLYQLGA 455
 QY 181 ATOARPPPHASGPRRLCERAWNHSVREAGVPLGLPAGARRGGASRSLLPLPKPRR 240
 Db 456 ATOARPPPHASGPRRLCERAWNHSVREAGVPLGLPAGARRGGASRSLLPLPKPRR 515
 QY 241 GAAPEFERTPVQGSWAHPGRTRGSPDRGFCVWSPARPAEATSLEGALSOTRHSHPSVG 300

Db 516 GAAPEFERTPVQGSWAHPGRTRGSPDRGFCVWSPARPAEATSLEGALSOTRHSHPSVG 575
 QY 301 RQHAGPPSTSRPPRWDTPCPVVAETKHFLYSSGDKQLRPSFLLSLSPSLTGARRL 360
 Db 576 RQHAGPPSTSRPPRWDTPCPVVAETK-FLYSSGDKQLRPSFLLSLSPSLTGARRL 634
 QY 361 VETIFLGSRPWPGTTPRLPLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPRAAVT 420
 Db 635 VETIFLGSRPWPGTTPRLPLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPRAAVT 694
 QY 421 PAAGVCAREKPGQGSVAAPDEEDTPRRLVQLLRHSSPWQYGVFRACLRRLVPPGLWGS 480
 Db 695 PAAGVCAREKPGQGSVAAPDEEDTPRRLVQLLRHSSPWQYGVFRACLRRLVPPGLWGS 754
 QY 481 RHNERRFLRNTKTFISLGKHAHKLQELTWQSVYRDCAWLRRSPGVGCVPAAEHRLREEI 540
 Db 755 RHNERRFLRNTKTFISLGKHAHKLQELTWQSVYRDCAWLRRSPGVGCVPAAEHRLREEI 814
 QY 541 LAKFLHLMWSVYVVELLRSFFVTTTFOKNRLFYKRSVMSKLOSIGIROHLKRVQURE 600
 Db 815 LAKFLHLMWSVYVVELLRSFFVTTTFOKNRLFYKRSVMSKLOSIGIROHLKRVQURE 874
 QY 601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVA 660
 Db 875 LSEAEVROHREARPAALLTSRLRFIPKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVA 934
 QY 661 LFSVLNTERARRPGLLGASVLGLDDIHRAMRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
 Db 935 LFSVLNTERARRPGLLGASVLGLDDIHRAMRTFVLVRAQDPPPELYFVKVDVTGAYDTI 994
 QY 721 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLOPYMRQFVAHL 780
 Db 995 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKSHVSTLTDLOPYMRQFVAHL 1054
 QY 781 QETSPLRDVAVIEOSSLSNEASSGLFDVFLRFMCHHAVIRGKSYVQCQGIPOGSIILSTL 840
 Db 1055 QETSPLRDVAVIEOSSLSNEASSGLFDVFLRFMCHHAVIRGKSYVQCQGIPOGSIILSTL 1114
 QY 841 LCSLCYGDMMENKLPAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRVLVRGVPYGVVNL 900
 Db 1115 LCSLCYGDMMENKLPAGIRRDGLLLRLVDDFLVTPHLLTHAKTFLRVLVRGVPYGVVNL 1174
 QY 901 RKTWNPFVEDEALGGTAFVQMPAHGLFPMCGLLDTRTLEVDQSDYSSYARTSTRASLTP 960
 Db 1175 RKTWNPFVEDEALGGTAFVQMPAHGLFPMCGLLDTRTLEVDQSDYSSYARTSTRASLTP 1234
 QY 961 NRGFKAGRNRRKLFVLRKCHSLFLLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1020
 Db 1235 NRGFKAGRNRRKLFVLRKCHSLFLLDQVNSLQTVCTNIYKILLQAYRFHACVLQLP 1294
 QY 1021 FHOQVWKNPTFFLRVSDTASLCYSTILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
 Db 1295 FHOQVWKNPTFFLRVSDTASLCYSTILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1354
 QY 1081 KLTRHRVTVYVPLLGSL-TAQQLSRKLPGLTTLTALEAANPALPSPDKTILD 1132
 Db 1355 KLTRHRVTVYVPLLGSL-TAQQLSRKLPGLTTLTALEAANPALPSPDKTILD 1405
 RESULT 35
 AAW47007
 ID AAW47007 standard; protein; 1199 AA.
 XX AC AAW47007;
 XX DX 13-AUG-1998 (first entry)
 XX Glutathione-S-transferase and hTERT fusion protein 7.
 DE Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
 XX cell proliferation; cancer; ageing; ribonucleoprotein.
 KW cell proliferation; cancer; ageing; ribonucleoprotein.
 XX

OS Synthetic.
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Misc-difference 32..33
FT /note= "enterokinase cleavage site"
XX
PN GB2317891-A.
XX
XX
PD 08-APR-1998.
XX
XX 01-OCT-1997; 97GB-00020890.
XX
PR 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00845017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX
PA (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX
XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB,
PI Andrews WH;
XX
XX WPI; 1998-171633/16.
DR
XX
PT Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX
PS Example 6; Page 233; 387pp; English.
XX
CC The present sequence represents a fusion protein from an example of the
CC present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods
XX
SQ Sequence 1199 AA;

Query Match 99.2%; Score 5911.5; DB 2; Length 1199;
Best Local Similarity 99.6%; Pred. No. 0;
Matches 1129; Conservative 0; Mismatches 1; Indels 3; Gaps 3;
1 MPAPRCRAVRSLLRSHYREVLPATFVRLGQWRLVQRGDPAAFRALVAQCLVCVPW 60
69 MPAPRCRAVRSLLRSHYREVLPATFVRLGQWRLVQRGDPAAFRALVAQCLVCVPW 128
61 DARPPPAAPSFROVSCLELVARVLQRLCERCAKNVLAFGFALLDGARGGPEAFTTSV 119
129 DARPPPAAPSFROVSCLELVARVLQRLCERCAKNVLAFGFALLDGARGGPEAFTTSV 188
120 RSYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLG 179

Db 189 RSYLPNTVTDALRGSGAWGLLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLYQLG 248
QY 180 AATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGGASRSRSLPKRPR 239
Db 249 AATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRRGGASRSRSLPKRPR 308
QY 240 RGAAPERTPVQGSWAHPGRTGRPSDRGFCVVSPPARPAEATSLEGALSGTRHSHPSV 299
Db 309 RGAAPERTPVQGSWAHPGRTGRPSDRGFCVVSPPARPAEATSLEGALSGTRHSHPSV 368
QY 300 GRQHHAGPPSTSRPPRPWDTPCPVYAEKHFELYSKGDEQLRPSFLISLSRLSLTCARR 359
Db 369 GRQHHAGPPSTSRPPRPWDTPCPVYAEKHFELYSKGDEQLRPSFLISLSRLSLTCARR 428
QY 360 LVETIFLGSRPWMPGTPRRLPLQRYWQMRPLFLLELGNHAQCPYGVLLKTHCPRAAV 419
Db 429 LVETIFLGSRPWMPGTPRRLPLQRYWQMRPLFLLELGNHAQCPYGVLLKTHCPRAAV 488
QY 420 TPAAGVCAREKPGQSVAAPEEEDTDPRLVQLLRQHSSPWQVYGFVRACLRRLVPPGLMG 479
Db 489 TPAAGVCAREM-QGSVAAPEEEDTDPRLVQLLRQHSSPWQVYGFVRACLRRLVPPGLMG 547
QY 480 SRHNERFLNTKKFISLGKHAQLSLOELTWKMSVRDCAWLRRSPGVCVPAAEHRLREE 539
Db 548 SRHNERFLNTKKFISLGKHAQLSLOELTWKMSVRDCAWLRRSPGVCVPAAEHRLREE 607
QY 540 ILAKFLHLMMSVYVVELLSRFFVTTTFOKNRFPYRKSVMSKLOSIGIROHLKRVQLR 599
Db 608 ILAKFLHLMMSVYVVELLSRFFVTTTFOKNRFPYRKSVMSKLOSIGIROHLKRVQLR 667
QY 600 ELSEAEVRHREARPALTSRLRFIPKPDGLRPIVNMDYVVGARTFRREKRAEELTSRVK 659
Db 668 ELSEAEVRHREARPALTSRLRFIPKPDGLRPIVNMDYVVGARTFRREKRAEELTSRVK 727
QY 660 ALFSLVNYERARRRPGLLGASVLGLDDIHRAWRTFVLVRADPPPELYFKVDVTGAYDT 719
Db 728 ALFSLVNYERARRRPGLLGASVLGLDDIHRAWRTFVLVRADPPPELYFKVDVTGAYDT 787
QY 720 IQPDRLTEVIASIIKPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTDLPYMRQFVAH 779
Db 788 IQPDRLTEVIASIIKPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTDLPYMRQFVAH 847
QY 780 LQETSPDRDAVIEQSSSLNEASSGLFDVFLRFMCHHAVRIKGSYVQCGIPQGSILST 839
Db 848 LQETSPDRDAVIEQSSSLNEASSGLFDVFLRFMCHHAVRIKGSYVQCGIPQGSILST 907
QY 840 LLCSLCYGDMENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLTLVRGVPYGCYVN 899
Db 908 LLCSLCYGDMENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLTLVRGVPYGCYVN 967
QY 900 LRKTVNFPVEALGGTAFVQMPAHGLFPWCGLLDTRTLEVSQSDYSYARTSIRASLT 959
Db 968 LRKTVNFPVEALGGTAFVQMPAHGLFPWCGLLDTRTLEVSQSDYSYARTSIRASLT 1027
QY 960 FNRGFKAGNMRKLFGLVLRKCHSLFDLQVNSLQTVCTNIYKILLQAYRFAHCVQL 1019
Db 1028 FNRGFKAGNMRKLFGLVLRKCHSLFDLQVNSLQTVCTNIYKILLQAYRFAHCVQL 1087
QY 1020 PFHQQVKNPPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHOAFL 1079
Db 1088 PFHQQVKNPPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVOMLCHOAFL 1147
QY 1080 LKLTHRVTVYVPLLSRLTAQTLGRKLPCTTLTALAAANPALPSDFKTILD 1132
Db 1148 LKLTHRVTVYVPLLSRLTAQTLGRKLPCTTLTALAAANPALPSDFKTILD 1199

RESULT 36
AAY00641
ID AAY00641 standard; protein; 1120 AA.
XX
AC AAY00641;
XX

DT XX 26-JUL-1999 (first entry)
DE XX Telomerase protein sequence lacking motif A.
KW XX Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX OS Homo sapiens.
OS Synthetic.
XX WO9901560-A1.
XX 14-JAN-1999.
XX 01-JUL-1998; 98WO-US013835.
XX 01-JUL-1997; 97US-0051410P.
XX 21-JUL-1997; 97US-0053018P.
XX 21-JUL-1997; 97US-0053329P.
XX 04-AUG-1997; 97US-0054642P.
XX 09-SEP-1997; 97US-0058287P.
XX (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX Kilian A, Bowtell D;
XX WPI; 1999-106060/09.
XX N-PSDB; AAX18269.
XX New isolated vertebrate telomerase genes - used to develop products for
XX treating cancers or for organ regeneration, nerve cell or brain cell
XX growth following injury or bone marrow transplantation.
XX Claim 4; Fig 11n-o; 134pp; English.
XX This sequence is a truncated human telomerase of the invention. Primers
XX that amplify the telomerase coding sequence can be used in a method for
XX diagnosing cancer in a patient. The telomerase can be used for detection,
XX diagnosis and drug screening. Inhibitors of telomerase activity can be
XX used to treat cancers such as melanomas, other skin cancers,
XX neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
XX lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
XX growths. Enhancers of telomerase may be used to stimulate stem cell
XX proliferation and differentiation (expansion of haematopoietic stem cells
XX could be administered in the bone marrow transplant context). As well,
XX many tissues have stem cells. Proliferation of these cells may be useful
XX in wound healing, hair growth, treatment of disease such as Wilm's
XX tumour, organ regeneration or differentiation after injury or diseases,
XX nerve cell or brain cell growth following injury
XX Sequence 1120 AA;
XX
XX Query Match 98.7%; Score 5882; DB 2; Length 1120;
XX Best Local Similarity 98.9%; Pred. No. 0;
XX Matches 1120; Conservative 0; Mismatches 0; Indels 12; Gaps 1;
XX
XX 1 MPRAPRCRAVRSLRSHYREVLPFLATFVRRLGPGQWRVLRQGDPAAFRALVAQCILVCPW 60
XX 1 MPRAPRCRAVRSLRSHYREVLPFLATFVRRLGPGQWRVLRQGDPAAFRALVAQCILVCPW 60
XX
XX 61 DARPPPAAPSPQVSCLELVARVLRQRCERGAKNVLAFGFALLDARGGPPPEFTTSVR 120
XX 61 DARPPPAAPSPQVSCLELVARVLRQRCERGAKNVLAFGFALLDARGGPPPEFTTSVR 120
XX
XX 121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLARCALFVLVAPSCAYQVCGPLYQLGA 180
XX 121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLARCALFVLVAPSCAYQVCGPLYQLGA 180
XX
XX 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGGSASRSILPDKPRR 240
XX 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGGSASRSILPDKPRR 240

QY 241 GAAPPERTPVGGGWAHPGRTRGSPDRGFCVVSAPAEAEATSEALSGTRHSHPSVG 300
DB 241 GAAPPERTPVGGGWAHPGRTRGSPDRGFCVVSAPAEAEATSEALSGTRHSHPSVG 300
QY 301 ROHHAGPPTSPRPSPWDTPCPPVYAEKTHFVSSGDKQELRPSFLLSLRSLTGARRL 360
DB 301 ROHHAGPPTSPRPSPWDTPCPPVYAEKTHFVSSGDKQELRPSFLLSLRSLTGARRL 360
QY 361 VETIFLGRPMMPGTFRRLPRLPQRYWQWRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGRPMMPGTFRRLPRLPQRYWQWRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRRLVQLLRQHSSPWQVGFVRACLRLRVPGLMGS 480
DB 421 PAAGVCAREKPGQSVAAPEEDTDPRRLVQLLRQHSSPWQVGFVRACLRLRVPGLMGS 480
QY 481 RHNERFLRNTKFKISLGHAKLSIQELTWKMSVRDCAWLRSSPGVGCVPAAEHLRREI 540
DB 481 RHNERFLRNTKFKISLGHAKLSIQELTWKMSVRDCAWLRSSPGVGCVPAAEHLRREI 540
QY 541 LAKFLHLMWSVYVVELLSFFYVTTTTFQKNRLFYRKSVMSKLSQIGIROHLKEVQURE 600
DB 541 LAKFLHLMWSVYVVELLSFFYVTTTTFQKNRLFYRKSVMSKLSQIGIROHLKEVQURE 600
QY 601 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVKA 660
DB 601 LSEAEVROHREARPAALLTSRLRFPKPDGLRPIVNM DYVVGARTFRREKRAERLTSRVKA 660
QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRQAQDPPPELYPVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRQAQDPPPELYPVKVDVTGAYDTI 720
QY 721 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMQFVAHL 780
DB 721 PODRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMQFVAHL 780
QY 781 QETSPLRDADVIEOSSSINEASSGLFDVFLRPMCHHVRIRCKSVYVOCGIPQGSILSTL 840
DB 781 QETSPLRDADVIEOSSSINEASSGLFDVFLRPMCHHVRIRCKSVYVOCGIPQGSILSTL 840
QY 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLVTPHLLTHAKTFTLTVRGVPEYGCVVNL 900
DB 841 LCSLCYGDMEKLPAGIRRDGLLRLVDDFLVTPHLLTHAKTFTLTVRGVPEYGCVVNL 900
QY 901 RKTVYVNFVEDEALGGTAFCVMPAHGLFPMCGLLDTRTLEVSQSDYSYARTSIRASLTF 960
DB 901 RKTVYVNFVEDEALGGTAFCVMPAHGLFPMCGLLDTRTLEVSQSDYSYARTSIRASLTF 960
QY 961 NRGFAGRNMRRLFGVLRKCHSLFDLDVNSIQTCTNITYKILLQAVRFHACVLQLP 1020
DB 961 NRGFAGRNMRRLFGVLRKCHSLFDLDVNSIQTCTNITYKILLQAVRFHACVLQLP 1020
QY 1021 FHQGVKNPTFFLRVISTDTSALCYSLKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
DB 1021 FHQGVKNPTFFLRVISTDTSALCYSLKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
QY 1081 KLTRHRVTVYVPLLSLRTAQTOISRLKPGTTLTALEAAANPALPSDFKTILD 1132
DB 1081 KLTRHRVTVYVPLLSLRTAQTOISRLKPGTTLTALEAAANPALPSDFKTILD 1132
XX RESULT 37
XX AAY00650
XX ID AAY00650 standard; protein; 1120 AA.
XX AC AAY00650;
XX XX
XX DT 26-JUL-1999 (first entry)
XX XX
XX DE Telomerase (ver. 2) protein sequence lacking motif A.
XX KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;

KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.

PN W09901560-A1.
XX
PD 14-JAN-1999.
XX
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
XX
PA (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX
PI Kilian A, Bowtell D;
XX
XX WPI; 1999-106060/09.
DR N-PSDB; AAX18278.
XX

XX New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
XX Claim 4; Fig 11ah-aj; 134pp; English.
XX
XX This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658
XX
SQ Sequence 1120 AA;

Query Match 98.5%; Score 5873; DB 2; Length 1120;
Best Local Similarity 98.9%; Pred. No. 0;
Matches 1119; Conservative 0; Mismatches 1; Indels 12; Gaps 1;

QY 1 MPRAPCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQGDPAAFRALVAQCLVCVPW 60
DB 1 MPRAPCRAVRSLLRSHYREVLPATFVRRLGQGWRLVQGDPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAAPSPROVSCIKELVARVLQRLCERGAQNVLAFCGALLDARGGPPPAFTTSVR 120
DB 61 DARPPPAAPSPROVSCIKELVARVLQRLCERGAQNVLAFCGALLDARGGPPPAFTTSVR 120
QY 121 SYLPNTVTDALRGSGAWGLLRLRVGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYLQGA 180
DB 121 SYLPNTVTDALRGSGAWGLLRLRVGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYLQGA 180
QY 181 ATQARPPPHASGPRRLRCERANVHVSREAGVPLGLPAGARRRGGSASRSLPLKPRPR 240
DB 181 ATQARPPPHASGPRRLRCERANVHVSREAGVPLGLPAGARRRGGSASRSLPLKPRPR 240
QY 241 GAAPPEPTPVGGQSWAHQPGTRGSDRGFCVVSPPAPAEATSLGALSGTRHSHPSVG 300
DB 241 GAAPPEPTPVGGQSWAHQPGTRGSDRGFCVVSPPAPAEATSLGALSGTRHSHPSVG 300

QY 301 RQHHAGPPSTSRPPRPWDTPCPVYAETKHFLYSSGDKQELRPSFLSLSLRPSLTGARRL 360
DB 301 RQHHAGPPSTSRPPRPWDTPCPVYAETKHFLYSSGDKQELRPSFLSLSLRPSLTGARRL 360
QY 361 VETIFLGSRPWMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
DB 361 VETIFLGSRPWMPGTPRRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSVAAAPREEDTPRRLVOLLRQHSHPQVYGFVACLRRLVPPGLWGS 480
DB 421 PAAGVCAREKPOGSVAAAPREEDTPRRLVOLLRQHSHPQVYGFVACLRRLVPPGLWGS 480
QY 481 RHNERRFLRNTKKFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAASHRLREEI 540
DB 481 RHNERRFLRNTKKFISLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAASHRLREEI 540
QY 541 LAKFLHMLSVVYVELLRSFFVYTETTFQKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE 600
DB 541 LAKFLHMLSVVYVELLRSFFVYTETTFQKNRLLFFYRKSVWSKLQSIGIRQHLKRVOLRE 600
QY 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAERLTSRVKA 660
DB 601 LSEAEVROHREARPAALLTSRLRPIPKPDGLRPIVNMVYVVGARTFRREKRAERLTSRVKA 660
QY 661 LFSVLNYERARRPGLLGASVGLGDDIHRARWTFVLVRADQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNYERARRPGLLGASVGLGDDIHRARWTFVLVRADQDPPPELYFVKVDVTGAYDTI 720
QY 721 PQDLREVIASIIKPONTYCVRRYAVVQAAHGHVKAFAKSHVSTLTDLPYMRQFVAHL 780
DB 721 --DRLTEVIASIIKPONTYCVRRYAVVQAAHGHVKAFAKSHVSTLTDLPYMRQFVAHL 780
QY 781 QETSPURDAVIEQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQIGIPGSSILSTL 840
DB 769 QETSPURDAVIEQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQIGIPGSSILSTL 828
QY 841 LCSLCYGDMEKLFAGIRDDGLLLRLVDLDFLLVTPHLLTHAKTFLRTLVRGVPEYGCYVNL 900
DB 829 LCSLCYGDMEKLFAGIRDDGLLLRLVDLDFLLVTPHLLTHAKTFLRTLVRGVPEYGCYVNL 888
QY 901 RKTVMNPFVEDEALGDTAFVQMPAHGLFPWCGLLLDTRTLEVSQDYSSTVARTSIRASLTF 960
DB 889 RKTVMNPFVEDEALGDTAFVQMPAHGLFPWCGLLLDTRTLEVSQDYSSTVARTSIRASLTF 948
QY 961 NRGFKAGRNWRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRPHACVLQLP 1020
DB 949 NRGFKAGRNWRKLFGLVRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRPHACVLQLP 1008
QY 1021 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1080
DB 1009 FHQQVWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAVQWLCHQAFLL 1068
QY 1081 KLTRHRVTYVPLIGSLRTAQTLQSRKLPQTTLTALEAAANPALPSFKTILD 1132
DB 1069 KLTRHRVTYVPLIGSLRTAQTLQSRKLPQTTLTALEAAANPALPSFKTILD 1120

RESULT 38
AAW47006
ID AAW47006 standard; protein; 1150 AA.
XX
AC AAW47006;
XX
DT 13-AUG-1998 (first entry)
XX
DE Glutathione-S-transferase and hTERT fusion protein 6.
XX
KW Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;
XX cell proliferation; cancer; ageing; ribonucleoprotein.
OS Synthetic.
OS Homo sapiens.

XX	GB2317891-A.	QY	241	GAAPERTVQGGSWAHFGRTRGSPDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
PN	XX	Db	241	GAAPERTVQGGSWAHFGRTRGSPDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
PD	08-APR-1998.	QY	301	ROHHAGPPSTSRPPRPMDTPCPVVAETHKFLYSSGDKQLPSPFLLSLRSLTGARRL	360
PF	XX	Db	301	ROHHAGPPSTSRPPRPMDTPCPVVAETHKFLYSSGDKQLPSPFLLSLRSLTGARRL	360
XX	01-OCT-1997; 97GB-00020890.	QY	361	VETIFLGSRPMPGTPRRRLPQRYWQMRPLFLELLGNHACQPCYGVLLKTHCPCRAAVT	420
PR	01-OCT-1996; 96US-00724643.	Db	361	VETIFLGS-PMWPGTPRRRLPQRYWQMRPLFLELLGNHACQPCYGVLLKTHCPCRAAVT	419
PR	18-APR-1997; 97US-00844419.	QY	421	PAAGVCAREKPOGSAVAPEEDTDRRLVQLLRQHSHPQVYGFVRACLRLVPPGL-WG	479
PR	25-APR-1997; 97US-00846017.	Db	420	PAAGVCAREKPOGSAVAPEEDTDRRLVQLLRQHSHPQVYGFVRACLRLVPPGLWG	479
PR	06-MAY-1997; 97US-00851843.	QY	480	SRHNERRFLRNTKFKISLGKHAHKLQELTWKMSVRDCAWLRRSPGVCVPAAEHRLREE	539
PR	09-MAY-1997; 97US-00854050.	Db	480	SRHNERRFLRNTKFKISLGKHAHKLQELTWKMSVRDCAWLRRSPGVCVPAAEHRLREE	539
PR	14-AUG-1997; 97US-00911312.	QY	540	ILAKFLHLMMSVYVVELLRSFFYTETTFQKNRFFFYRKSVMKLSQISIGIRQHLKRVOLR	599
PR	14-AUG-1997; 97US-00912951.	Db	540	ILAKFLHLMMSVYVVELLRSFFW-TETTFQKNRFFFYRKSVMKLSQISIGIRQHLKRVOLR	598
XX	(GERO-) GERON CORP.	QY	600	ELSEAEVQREARPAALITSLRIPKDPGLRPVW-MDYVVGARTPRREKRAELTSRV	658
PA	(UYTE-) UNIV TECHNOLOGY CORP.	Db	599	ELSEAEVQREARPAALITSLRIPKDPGLRPVW-MDYVVGARTPRREKRAELTSRV	657
PI	Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB, Andrews WH;	QY	659	KALFSLNLYERARRPGLIGASVLGLDDTHRAWRTFVLVRRAQDPPPELYFVKVDVTGAYD	718
PI	WPI; 1998-171633/16.	Db	658	KALFSLNLYERARRPGLIGASVLGLDDTHRAWRTFVLVRRAQDPPPELYFVKVDVTGAYD	717
DR	Pure and recombinant human Telomerase Reverse Transcriptase and its variants - are useful in the diagnosis, prognosis and treatment of cell proliferation conditions especially cancer and ageing.	QY	719	TIPQDRLETVIASIKPQNTYCVRYAVQVQAAHGHVRKAFKSHVSTLTDLPYMRQFVA	778
XX	Example 6; Page 231-232; 387pp; English.	Db	718	TIPQDRLETVIASIKPQNTYCVRYAVQVQAAHGHVRKAFKSHVSTLTDLPYMRQFVA	777
XX	The present sequence represents a fusion protein from an example of the present invention which describes human telomerase reverse transcriptase (hTERT). The present invention also describes the following methods: (A) determining whether a test compound is a modulator of hTERT by detecting the change in hTERT recombinant protein or polynucleotide, on administration of the compound; (B) preparation of recombinant telomerase by contacting a protein preparation of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or protein in a sample by binding a relevant probe to the sample and detecting the complex formed or in the case of RNA detection, amplifying the product and correlating the presence of complex or amplification product with presence of hTERT in the sample; and (D) increasing the proliferation of a vertebrate cell by increasing hTERT expression; and (E) the use of an agent that causes an increase in cell vertebrate cell proliferation to create a medicament that inhibits ageing. A protein preparation of hTERT and the polynucleotide encoding hTERT can be used in the manufacture of medicaments for inhibiting the effect of ageing or cancer. Inhibitors of telomerase activity can be used to treat conditions that are associated with high telomerase activity. A protein preparation of hTERT can also be used in the new methods	QY	779	HLQSTPLRDVAVTEQSSSL-NEASSGLFDVFLRFMCHAVRIRGKSYVOCQIPQGSIL	837
CC		Db	778	HLQSTPLRDVAVTEQSSSL-NEASSGLFDVFLRFMCHAVRIRGKSYVOCQIPQGSIL	835
CC		QY	838	STLLCSLCYGDMMENKLFAGIRRDGLLRVDDFLVTPHLLTHAKTFTLTVRGVPEYGCV	897
CC		Db	836	STLLCSLCYGDMMENKLFAGIRRDGLLRVDDFLVTPHLLTHAKTFTLTVRG-PEYGCV	894
CC		QY	898	VNLKRTVNVPEDEALGATFVQMPAHLFPW-CGLLDTRLEVDSDYSSVARTSIRA	956
CC		Db	895	VNLKRTV--FPVEDEALGATFVQMPAHLFPWCGLLDTRTLEVDSDYSSVARTSIRA	952
CC		QY	957	SLTFNRGFKAGR-NMRRKLFGLRLKCHSLFLDLQVNSLQVCTNTIYKILLQAYRPHAC	1015
CC		Db	953	SLTFNRGFKAGR-NMRRKLFGLRLKCHSLFLDLQVNSLQVCTNTIYKILLQAYRPHAC	1012
QY		QY	1016	VLQLPQQVWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAGPLPSEAVQWLCH	1075
Db		Db	1013	VLQLPQQVWKNPTFFLRVISDTASLCYSILKAKNAGSLGAKGAGPLPSEAVQWLCH	1072
QY		QY	1076	QAFLLKLTTRHRTVYVPLGLSLRTAQOLSKLPCTTLTALEAANPALPSDFKTIID	1132
Db		Db	1073	QAFLLKLTTRHRTVYVPLGLSLRTAQOLSKLPCTTLTALEAANPAL-SDFKTIID	1128
XX	RESULT 39				
XX	AA000640				
XX	ID AA000640 standard; protein; 1053 AA.				
XX	AC AA000640;				
XX	DT 26-JUL-1999 (first entry)				
XX	DE Altered C-terminused telomerase protein sequence.				
XX	KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia; neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;				

Query Match	96.0%;	Score 5721;	DB 2;	Length 1150;
Best Local Similarity	97.8%;	Pred. No. 0;		
Matches 1112;	Conservative 6;	Mismatches 5;	Indels 14;	Gaps 13;
QY	1	MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW	60	
Db	1	MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGQWRLVQRGDPAAFRALVAQCLVCVPW	60	
QY	61	DARPPPAAPSFRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDAGRGPPPEAFTTSVR	120	
Db	61	DARPPPAAPSFRQVSCLEKELVARVLQRLCERGAKNVLAFGFALLDAGRGPPPEAFTTSVR	120	
QY	121	SYLPNTVTDALRGSGAWGALLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLXQLGA	180	
Db	121	SYLPNTVTDALRGSGAWGALLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLXQLGA	180	
QY	181	ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRGGASRSRLPLPKPRR	240	
Db	181	ATQARPPPHASGPRRLGCERAWNHSVREAGVPLGLPAPGARRGGASRSRLPLPKPRR	240	

KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX

OS Homo sapiens.

XX Synthetic.

XX W09901560-A1.

XX 14-JAN-1999.

XX 01-JUL-1998; 98WO-US013835.

XX 01-JUL-1997; 97US-0051410P.

PR 21-JUL-1997; 97US-0053018P.

PR 21-JUL-1997; 97US-0053329P.

PR 04-AUG-1997; 97US-0054642P.

PR 09-SEP-1997; 97US-0058287P.

XX (CMB-) CAMBIA BIOSYSTEMS LLC.

XX

PI Kilian A, Bowtell D;

XX

XX WPI; 1999-106060/09.

DR N-PSDB; AAX18268.

XX

PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX

PS Claim 4; Fig 111-m; 134pp; English.

XX

CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The C-terminus of
CC this sequence can be replaced by the sequence shown in AAY00654
XX

SQ Sequence 1053 AA;

Query Match 93.2%; Score 5555; DB 2; Length 1053;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1052; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MPRAPRCVRSLLRSHYREVLPATFVRRLGQWRLVQGDPAAPRALVAOCLVCVPW 60

Db 1 MPRAPRCVRSLLRSHYREVLPATFVRRLGQWRLVQGDPAAPRALVAOCLVCVPW 60

Qy 61 DARPPPAAPSPFVQSCVLCVAVLQRLCERGAQNVLAFCFALLDVGAGGPPPEAFTSVR 120

Db 61 DARPPPAAPSPFVQSCVLCVAVLQRLCERGAQNVLAFCFALLDVGAGGPPPEAFTSVR 120

Qy 121 SYLPTNTVTDALRSGGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180

Db 121 SYLPTNTVTDALRSGGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180

Qy 181 ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAGARRGGGSASRLPLPKRPRR 240

Db 181 ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAGARRGGGSASRLPLPKRPRR 240

Qy 241 GAAPERTPVGGGWAHPGRTGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300

Db 241 GAAPERTPVGGGWAHPGRTGSPDRGFCVVSPPAPAEATSLGALSGTRHSPSVG 300

Qy 301 RQHAGPPSTSRPRPDWTPCPVYAEKHFILYSSGDKQELRPSFLSSLRPSLTGARRL 360

Db 301 RQHAGPPSTSRPRPDWTPCPVYAEKHFILYSSGDKQELRPSFLSSLRPSLTGARRL 360

Qy 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFELLGNHAQCPYGVLLKTHCPLRAAVT 420

Db 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFELLGNHAQCPYGVLLKTHCPLRAAVT 420

Qy 421 PAAGVCAREKPGQSGVAAPPEEEDTPRRLVOLLRHQSSPMQVYGFVRACTLRRLVPPGLWGS 480

Db 421 PAAGVCAREKPGQSGVAAPPEEEDTPRRLVOLLRHQSSPMQVYGFVRACTLRRLVPPGLWGS 480

Qy 481 RHNERPLNTKXFIISLGKHAQLSLOELTWKMSVRDCAMLRSPGVCVGPAAEHLREEL 540

Db 481 RHNERPLNTKXFIISLGKHAQLSLOELTWKMSVRDCAMLRSPGVCVGPAAEHLREEL 540

Qy 541 LAKFLHMLSVVVELLRSPFYVTTTFOKNRLFFYRKSVMSKLOSTIGIROHLKRVOLRE 600

Db 541 LAKFLHMLSVVVELLRSPFYVTTTFOKNRLFFYRKSVMSKLOSTIGIROHLKRVOLRE 600

Qy 601 LSEAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660

Db 601 LSEAEVRQHREARPAALLTSRLRPIPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA 660

Qy 661 LFSVLNYERARRPGLLGASVGLDLDIHRARWTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

Db 661 LFSVLNYERARRPGLLGASVGLDLDIHRARWTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

Qy 721 PQDLTEVTASIIKPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTDLQPYMRFVAHL 780

Db 721 PQDLTEVTASIIKPQNTYCVRRYAVVQAAHGHVRKAFKSHVSTLTDLQPYMRFVAHL 780

Qy 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPOGSIILSTL 840

Db 781 QETSPLRDAVVIQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSVYQCGIPOGSIILSTL 840

Qy 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDVDFLLVTPHMLTHAKTFLRTLVRGPVEYGCVVNL 900

Db 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDVDFLLVTPHMLTHAKTFLRTLVRGPVEYGCVVNL 900

Qy 901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPMCGLLDTRTLEQSDYSSYARTSIRASLT 960

Db 901 RKTVMNFPVEDEALGCTAFVQMPAHGLFPMCGLLDTRTLEQSDYSSYARTSIRASLT 960

Qy 961 NRGFKAGRNMRRLFGVLRKCHSLFDLDQVNSLQVCTNIYKILLQAYRHFACVQLP 1020

Db 961 NRGFKAGRNMRRLFGVLRKCHSLFDLDQVNSLQVCTNIYKILLQAYRHFACVQLP 1020

Qy 1021 FHQVWKNPTFFFLRVISDTASLCYSILKAKNA 1052

Db 1021 FHQVWKNPTFFFLRVISDTASLCYSILKAKNA 1052

RESULT 40

AAY00649

ID AAY00649 standard; protein; 1093 AA.

XX

AC AAY00649;

XX

DT 26-JUL-1999 (first entry)

XX

DE Altered C-terminus telomerase (ver. 2) protein sequence.

XX

KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;

KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;

KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;

XX stem cell differentiation; organ regeneration; organ differentiation.

OS Homo sapiens.

OS Synthetic.

XX W09901560-A1.

PN

XX

XX 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX (CAMB-) CAMBIA BIOSYSTEMS LLC.
PA Kilian A, Bowtell D;
XX WPI; 1999-106060/09.
DR N-PSDB; AAX18280.
XX
New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
XX Claim 4; Fig 11am-an; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658,
CC and the C-terminus can be replaced by the sequence shown in AAY00654
XX
SQ Sequence 1041 AA;
Query Match 91.7%; Score 5467; DB 2; Length 1041;
Best Local Similarity 98.8%; Pred. No. 0;
Matches 1039; Conservative 0; Mismatches 1; Indels 12; Gaps 1;
QY 1 MPRAPRCRAVRSLLRSHYREVLPATFVRLRGQWRLVQRPAAFRALVAQCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPATFVRLRGQWRLVQRPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAAPSFQVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSFQVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
QY 121 SYLPNTVTDALRGSGANGLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLVOLGA 180
DB 121 SYLPNTVTDALRGSGANGLLRRVGGDVLVHLARCALFVLVAPSCAYQVCGPPLVOLGA 180
QY 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
DB 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGLPAPGARRRGSASRSLPLPKRPRR 240
QY 241 GAAPEPERTVPGQSWAHPGRTGSDRGFCVVSPPARPAEATSLGALSGRHSHPSVG 300
DB 241 GAAPEPERTVPGQSWAHPGRTGSDRGFCVVSPPARPAEATSLGALSGRHSHPSVG 300
QY 301 RQHAGPPTSRPRPDWTPCPVYAEKIFLYSSGDKQELRPSFLLSLRPSLTGARLL 360
DB 301 RQHAGPPTSRPRPDWTPCPVYAEKIFLYSSGDKQELRPSFLLSLRPSLTGARLL 360
QY 361 VETIFLGSRRPWPMTGTPRRLPRLQRYWQMRPLFLELLGNHAQCPYGLLKTHCPLRAAVT 420
DB 361 VETIFLGSRRPWPMTGTPRRLPRLQRYWQMRPLFLELLGNHAQCPYGLLKTHCPLRAAVT 420
QY 421 PAAGVCAREKPOGSAAPPEEDTPRRLVQLLRQHSHPWQVYGFVRACLRRLVPPGLWGS 480

DB 421 PAAGVCAREKPOGSAAPPEEDTPRRLVQLLRQHSHPWQVYGFVRACLRRLVPPGLWGS 480
QY 481 RHNERRFLRNTKKFISLGKHAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
DB 481 RHNERRFLRNTKKFISLGKHAKLSLOBLTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
QY 541 LAKFLHLMMSVYVVELLSRFFVYVTTTFQKNRLEFFYRKSVMSKLSQSIGIRQHILKRVQLRE 600
DB 541 LAKFLHLMMSVYVVELLSRFFVYVTTTFQKNRLEFFYRKSVMSKLSQSIGIRQHILKRVQLRE 600
QY 601 LSEAEVRQREARPPALLTSRLRPIPKPDGLRPINMDYVVGARTFRREKAEALTSRVKA 660
DB 601 LSEAEVRQREARPPALLTSRLRPIPKPDGLRPINMDYVVGARTFRREKAEALTSRVKA 660
QY 661 LFSVLNVERARRRGLLGASVLGLDDIHRAWRTFVLVRADQPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRRGLLGASVLGLDDIHRAWRTFVLVRADQPPPELYFVKVDVTGAYDTI 720
QY 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
DB 721 --DRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHL 780
QY 781 QETSPIRDADVIRQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
DB 781 QETSPIRDADVIRQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQIPOGSIILSTL 840
QY 841 LCSLCYGDMMENKLFAGIRRDGLLRVDDPLVTPHLTHAKTFLRLTVRGVPYGCVVNL 900
DB 841 LCSLCYGDMMENKLFAGIRRDGLLRVDDPLVTPHLTHAKTFLRLTVRGVPYGCVVNL 900
QY 901 RKTVVNFPVEDEALGTAFFVQMPAHGLFPWCGLLDTLRTLEVOQSDYSSVARTSIRASLT 960
DB 901 RKTVVNFPVEDEALGTAFFVQMPAHGLFPWCGLLDTLRTLEVOQSDYSSVARTSIRASLT 960
QY 961 NRGFKAGRMRRKLPVGLRLKCHSLFLDQVNSLQTVCTNIYKILLQAYRFHACVQLP 1020
DB 961 NRGFKAGRMRRKLPVGLRLKCHSLFLDQVNSLQTVCTNIYKILLQAYRFHACVQLP 1020
QY 1021 FHOQVWKNPTFFLRVISTDASLCYSILKAKNA 1052
DB 1009 FHOQVWKNPTFFLRVISTDASLCYSILKAKNA 1040
RESULT 42
AAY00643
ID AAY00643 standard; protein; 1041 AA.
XX AAY00643;
AC AAY00643;
XX 26-JUL-1999 (first entry)
XX
DE Altered C-terminused telomerase protein sequence lacking motif A.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO9901560-A1.
XX
PD 14-JAN-1999.
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX

PA (CMB-) CAMBIA BIOSYSTEMS LLC.
 PI Kilian A, Bowtell D;
 XX WPI; 1999-106060/09.
 DR N-PSDB; AAX18271.
 XX New isolated vertebrate telomerase genes - used to develop products for
 PT treating cancers or for organ regeneration, nerve cell or brain cell
 PT growth following injury or bone marrow transplantation.
 XX
 PS Claim 4; Fig 11r-s; 134pp; English.
 XX
 CC This sequence is a truncated human telomerase of the invention. Primers
 CC that amplify the telomerase coding sequence can be used in a method for
 CC diagnosing cancer in a patient. The telomerase can be used for detection,
 CC diagnosis and drug screening. Inhibitors of telomerase activity can be
 CC used to treat cancers such as melanomas, other skin cancers,
 CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
 CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
 CC growths. Enhancers of telomerase may be used to stimulate stem cell
 CC proliferation and differentiation (expansion of haematopoietic stem cells
 CC could be administered in the bone marrow transplant context). As well,
 CC many tissues have stem cells. Proliferation of these cells may be useful
 CC in wound healing, hair growth, treatment of disease such as Wilm's
 CC tumour, organ regeneration or differentiation after injury or diseases,
 CC nerve cell or brain cell growth following injury. Note: The C-terminus of
 CC this sequence can be replaced by the sequence shown in AAY00654
 XX
 SQ Sequence 1041 AA;
 Query March 91.7%; Score 5467; DB 2; Length 1041;
 Best Local Similarity 99.8%; Pred. No. 0;
 Matches 1039; Conservative 0; Mismatches 1; Indels 12; Gaps 1;
 Qy 1 MPRAPRCVRSLLRSYRVLPLATFVRLGQWRLVQRGDPAAFRALVAQCLVCPW 60
 Db 1 MPRAPRCVRSLLRSYRVLPLATFVRLGQWRLVQRGDPAAFRALVAQCLVCPW 60
 Qy 61 DARPPPAAPSRFQVSCLELVARVLQRLCERGAKNVLAFLGALLDGAAGPPEAFTSVR 120
 Db 61 DARPPPAAPSRFQVSCLELVARVLQRLCERGAKNVLAFLGALLDGAAGPPEAFTSVR 120
 Qy 121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 Db 121 SYLPTNTVDALRGSGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
 Qy 181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAGARRRGSASRSPLPKRPRR 240
 Db 181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAGARRRGSASRSPLPKRPRR 240
 Qy 241 GAAPERTPVGGSWAHFGRTRGSPDRGFCVVSPPARPAEATSLEGALSGTRHSPSVG 300
 Db 241 GAAPERTPVGGSWAHFGRTRGSPDRGFCVVSPPARPAEATSLEGALSGTRHSPSVG 300
 Qy 301 RQHAGPPTSTPRPDPWTPCPVVAETKHFLYSSGDKQLPSPFLSSLPSTGARRL 360
 Db 301 RQHAGPPTSTPRPDPWTPCPVVAETKHFLYSSGDKQLPSPFLSSLPSTGARRL 360
 Qy 361 VETIFLGSPPMFGTPRRPLRPLQRYWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
 Db 361 VETIFLGSPPMFGTPRRPLRPLQRYWQMRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
 Qy 421 PAAGVCAREKPGQSVNAAPBEEDTPRRLVOLLRQHSPPQVYGFVRACLRLVPPGLWGS 480
 Db 421 PAAGVCAREKPGQSVNAAPBEEDTPRRLVOLLRQHSPPQVYGFVRACLRLVPPGLWGS 480
 Qy 481 RHNERFLNTKFTSLGKHAKLSLQELTWKMSVRDCAWLRRSPGCVPAAEHRLREEI 540
 Db 481 RHNERFLNTKFTSLGKHAKLSLQELTWKMSVRDCAWLRRSPGCVPAAEHRLREEI 540
 Qy 541 LAKFLHMLSVVVELLSRFFVTTTFOKRLFFYRKSVWSKLSQIGIRQHLKRVQLRE 600

Db 541 LAKFLHMLSVVVELLSRFFVTTTFOKRLFFYRKSVWSKLSQIGIRQHLKRVQLRE 600
 Qy 601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRIPVNDYVVGARTFRREKRAERLTSRVKA 660
 Db 601 LSEAEVROHREARPAALLTSRLRFIPKPDGLRIPVNDYVVGARTFRREKRAERLTSRVKA 660
 Qy 661 LFSVLNYESARPGLLGASVLGDDIHRARWTFVLVRAQDPPPELYFYKVDVTGAYDTI 720
 Db 661 LFSVLNYESARPGLLGASVLGDDIHRARWTFVLVRAQDPPPELYFYKVDVTGAYDTI 720
 Qy 721 PODRLTEVIASIIKPONTYCVRRYAVVOKAAAGHVKAFKSHVSTLTDLOPYMRQFVAHL 780
 Db 721 PODRLTEVIASIIKPONTYCVRRYAVVOKAAAGHVKAFKSHVSTLTDLOPYMRQFVAHL 780
 Qy 781 QTSPLRDAVTEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVVQCGIPQSGILSTL 840
 Db 781 QTSPLRDAVTEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSVVQCGIPQSGILSTL 840
 Qy 841 LCSLCYGMENKLFAGIRBDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGCVVNL 888
 Db 841 LCSLCYGMENKLFAGIRBDGLLLRLVDDFLVTPHLLTHAKTFLRTLVRGVEYGCVVNL 888
 Qy 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTLRTLEVQSDYSYARTSIRASLTF 960
 Db 901 RKTVMNPFVEDEALGGTAFVQMPAHGLFPWCGLLDTLRTLEVQSDYSYARTSIRASLTF 960
 Qy 961 NRGFKAGNMRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVQLQP 1020
 Db 961 NRGFKAGNMRRKLFVGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAVRFHACVQLQP 1020
 Qy 1021 FHOQWKNPTFFLRVDSITASLCYSILKAKNA 1052
 Db 1009 FHOQWKNPTFFLRVDSITASLCYSILKAKNA 1040
 RESULT 43
 AAY00639
 ID AAY00639 standard; protein; 948 AA.
 AC AAY00639;
 XX 26-JUL-1999 (first entry)
 DE N-terminal truncated telomerase protein sequence.
 KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
 KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
 KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
 KW stem cell differentiation; organ regeneration; organ differentiation.
 OS Homo sapiens.
 OS Synthetic.
 PW W09901560-A1.
 PD 14-JAN-1999.
 PF 01-JUL-1998; 98WO-US013835.
 PR 01-JUL-1997; 97US-0051410P.
 PR 21-JUL-1997; 97US-0053018P.
 PR 21-JUL-1997; 97US-0053329P.
 PR 04-AUG-1997; 97US-0054642P.
 PR 09-SEP-1997; 97US-0058287P.
 PA (CMB-) CAMBIA BIOSYSTEMS LLC.
 XX Kilian A, Bowtell D;
 XX WPI; 1999-106060/09.
 DR N-PSDB; AAY00639.
 XX New isolated vertebrate telomerase genes - used to develop products for

PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
PS Claim 4; Fig 11j-k; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury
XX
SQ Sequence 948 AA;

Query Match 84.0%; Score 5008; DB 2; Length 948;
Best Local Similarity 99.9%; Pred. No. 0;
Matches 946; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPCRVRSLLRSHYREVLPLATFVRLPGQWRLVORGDPAAPRALVAQCLVCPW 60
DB 1 MPRAPCRVRSLLRSHYREVLPLATFVRLPGQWRLVORGDPAAPRALVAQCLVCPW 60
QY 61 DARPPPAAPSPRQVSCLELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
DB 61 DARPPPAAPSPRQVSCLELVARVLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
QY 121 SYLNTVTDALRGSGALLRLRRVGGDDVLVHLLARCALFVLVAPSCAYVCGPPLYQLGA 180
DB 121 SYLNTVTDALRGSGALLRLRRVGGDDVLVHLLARCALFVLVAPSCAYVCGPPLYQLGA 180
QY 181 ATOARPPPHASGPRRRRLGCRANWHSVREAGVPLGLPAGARRRGGSSASRLPLPKRPRR 240
DB 181 ATOARPPPHASGPRRRRLGCRANWHSVREAGVPLGLPAGARRRGGSSASRLPLPKRPRR 240
QY 241 GAAPEPERTVPGQSWAHPGTRGSPDRGFCVSPARPABEATSGALSGTRHSHPSVG 300
DB 241 GAAPEPERTVPGQSWAHPGTRGSPDRGFCVSPARPABEATSGALSGTRHSHPSVG 300
QY 301 ROHAGAPSTSRPPRPWDTPCPVYAEKHLFVSSGDKQLRPSFLSSLRPSLTGARRL 360
DB 301 ROHAGAPSTSRPPRPWDTPCPVYAEKHLFVSSGDKQLRPSFLSSLRPSLTGARRL 360
QY 361 VETIFLGSRRPMPGTPRRLPRLPORYWQMRPLFLELGNHAQCPYGVLLKTHCPLRAAVT 420
DB 361 VETIFLGSRRPMPGTPRRLPRLPORYWQMRPLFLELGNHAQCPYGVLLKTHCPLRAAVT 420
QY 421 PAAGVCAREXPQGSVAAPPEEDTDPRLVQLLRHSSFPWQYGFVRACLRRLVPPGLWGS 480
DB 421 PAAGVCAREXPQGSVAAPPEEDTDPRLVQLLRHSSFPWQYGFVRACLRRLVPPGLWGS 480
QY 481 RHNERRFLNTHKFKISIGKHNKLSLOBLTWKMSVRDCAWLRSPGVCVPAAEHRLREEI 540
DB 481 RHNERRFLNTHKFKISIGKHNKLSLOBLTWKMSVRDCAWLRSPGVCVPAAEHRLREEI 540
QY 541 LAKFLHLMWSVYVVELLRSFPYVTTTFOKNRLFYFKSVWSKLSQIGIQHLKRVQLRE 600
DB 541 LAKFLHLMWSVYVVELLRSFPYVTTTFOKNRLFYFKSVWSKLSQIGIQHLKRVQLRE 600
QY 601 LSEAEVQHQREARPAALLTSRLRFTPKDGLRPIVNMVYVVGARTFREKAEARLTSVKA 660
DB 601 LSEAEVQHQREARPAALLTSRLRFTPKDGLRPIVNMVYVVGARTFREKAEARLTSVKA 660
QY 661 LFSVLNTERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNTERARRPGLLGASVLGLDDIHRAWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

QY 721 PQDLRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHRKAFKSHVSTLTDLPYMQFVAHL 780
DB 721 PQDLRLTEVIASIIKPNQTYCVRRYAVVQKAAHGHRKAFKSHVSTLTDLPYMQFVAHL 780
QY 781 QETSPLRDADVIVQSSSLNEASSGLFDVFLRFMCHHAAVRIRGKSYVOCQGIPOQSII STL 840
DB 781 QETSPLRDADVIVQSSSLNEASSGLFDVFLRFMCHHAAVRIRGKSYVOCQGIPOQSII STL 840
QY 841 LCSLCVGDMDENKLPAGIRRRDGLLRVDDFLVLTTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
DB 841 LCSLCVGDMDENKLPAGIRRRDGLLRVDDFLVLTTPHLTHAKTFLRLTVRGVPEYGCVVNL 900
QY 901 RKTVMVFPVDEALGCTAFVQMPAHGLFPMCGLLDTRTLEVSQSDYS 947
DB 901 RKTVMVFPVDEALGCTAFVQMPAHGLFPMCGLLDTRTLEVSQSDYS 947
RESULT 44
AAV00648
ID AAV00648 standard; protein; 948 AA.
XX
AC AAV00648;
XX
DT 26-JUL-1999 (first entry)
XX
DE Truncated telomerase 3 protein sequence.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO9901560-A1.
XX
PD 14-JAN-1999.
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
PA (CAMP-) CAMBIA BIOSYSTEMS LLC.
XX
PI Kilian A, Bowtell D;
XX
XX WPI; 1999-106060/09.
DR N-PSDB; AAX18276.
XX
PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
PS Claim 4; Fig 11ad-ae; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's

CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658
XX
SQ Sequence 948 AA;

		Query Match	83.9%;	Score 5004;	DB 2;	Length 948;		
		Best Local Similarity	99.9%;	Pred. No. 0;				
		Mismatches	946;	Conservative	0;	Mismatches	1;	Gaps
QY	1	MPRAPRCRAVRSLLRSHYREVLP	PLATFVRRLGPGQWRLVQRGDPAAPRALVAQCLVCVPW	60				
Db	1	MPRAPRCRAVPSLLRSHYREVLP	PLATFVRRLGPGQWRLVQRGDPAAPRALVAQCLVCVPW	60				
QY	61	DARPPAAPSPFQVSCLELVARVL	ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120				
Db	61	DARPPAAPSPFQVSCLELVARVL	ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR	120				
QY	121	SYLPNTVTDALRGSGAWGLLRRV	GDVLLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180				
Db	121	SYLPNTVTDALRGSGAWGLLRRV	GDVLLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180				
QY	181	ATOARPPHAGSPRRRLRCERAN	HSVREAGVPLGLPAGARRRGGSASRLPLPKRPR	240				
Db	181	ATOARPPHAGSPRRRLRCERAN	HSVREAGVPLGLPAGARRRGGSASRLPLPKRPR	240				
QY	241	GAAPERTPVQGSWAHPGRTGR	PSDRGFCVSPARPABEATSGALSGTRHSPSVG	300				
Db	241	GAAPERTPVQGSWAHPGRTGR	PSDRGFCVSPARPABEATSGALSGTRHSPSVG	300				
QY	301	RQHAGPPSTSRPRPMDTPCP	PVYAEKHFLLYSSGDKQLRPSFLSSLRPSLTGARRL	360				
Db	301	RQHAGPPSTSRPRPMDTPCP	PVYAEKHFLLYSSGDKQLRPSFLSSLRPSLTGARRL	360				
QY	361	VETIFLGRPMWCTPRRLPCL	PORYWOMRPLFLELLGNHAQCPYGVLLKTHCPLAAVT	420				
Db	361	VETIFLGRPMWCTPRRLPCL	PORYWOMRPLFLELLGNHAQCPYGVLLKTHCPLAAVT	420				
QY	421	PAAGVCAREKPGQSVAAPEE	DDTPRLVLQRLRHSHSPWQVGFVRACLRLVPPGLWGS	480				
Db	421	PAAGVCAREKPGQSVAAPEE	DDTPRLVLQRLRHSHSPWQVGFVRACLRLVPPGLWGS	480				
QY	481	RHNERFLRNTKFIISLGKIAK	LSQLTWNKSVRCAMWLRRSPGVGCVPAAEHLRREI	540				
Db	481	RHNERFLRNTKFIISLGKIAK	LSQLTWNKSVRCAMWLRRSPGVGCVPAAEHLRREI	540				
QY	541	LAKFLHLMVSVYVELLSRFF	YTTTFFQKNRLFYFRKSVWSKLQSIGIRQHLKRVOLRE	600				
Db	541	LAKFLHLMVSVYVELLSRFF	YTTTFFQKNRLFYFRKSVWSKLQSIGIRQHLKRVOLRE	600				
QY	601	LSAEVQRHREARPALTSRL	RFIKPDGLRPIVNMNDYVVGARTFRREKRAERLTSRVKA	660				
Db	601	LSAEVQRHREARPALTSRL	RFIKPDGLRPIVNMNDYVVGARTFRREKRAERLTSRVKA	660				
QY	661	LFSVLNVERARRCLIGASVL	GLDDTHRAWRTPVLVRADQPPPELYFVKVDVGTAYDTI	720				
Db	661	LFSVLNVERARRCLIGASVL	GLDDTHRAWRTPVLVRADQPPPELYFVKVDVGTAYDTI	720				
QY	721	PQRLTEVIASIIKPNQTYC	VRRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL	780				
Db	721	PQRLTEVIASIIKPNQTYC	VRRYAVVQKAAGHVRKAFKSHVSTLTDLPQYMRQFVAHL	780				
QY	781	QETSPIRDVAVIQSSSLNEA	SSGLFDVFLRFMCHHAVIRKGSYVQCQIGPQGSILSTL	840				
Db	781	QETSPIRDVAVIQSSSLNEA	SSGLFDVFLRFMCHHAVIRKGSYVQCQIGPQGSILSTL	840				
QY	841	LCSLCYGDMENKLFAGIR	GDGLLRLVDDFLVTPHLTHAKTFLTLVRGVEYGCNVN	900				
Db	841	LCSLCYGDMENKLFAGIR	GDGLLRLVDDFLVTPHLTHAKTFLTLVRGVEYGCNVN	900				
QY	901	RKTVMNFPVEDEALGCTA	FVQMPAHGLFPWCGLLDDTRTLEVQSDYS	947				
Db	901	RKTVMNFPVEDEALGCTA	FVQMPAHGLFPWCGLLDDTRTLEVQSDYS	947				

RESULT 45
AAY00642

ID AAY00642 standard; protein; 936 AA.

XX AC AAY00642;

XX DT 26-JUL-1999 (first entry)

XX Truncated telomerase protein sequence lacking motif A.

XX Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
XX neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
XX smooth muscle cell hyperplasia; stem cell proliferation; Wilms' tumour;
XX stem cell differentiation; organ regeneration; organ differentiation.

OS Homo sapiens.

OS Synthetic.

PN WO9901560-A1.

XX 14-JAN-1999.

XX 01-JUL-1998; 98WO-US013835.

XX 01-JUL-1997; 97US-0051410P.

XX 21-JUL-1997; 97US-0053018P.

XX 21-JUL-1997; 97US-0053329P.

XX 04-AUG-1997; 97US-0054642P.

XX 09-SEP-1997; 97US-0058287P.

XX (CMB-) CAMBIA BIOSYSTEMS LLC.

XX Kilian A, Bowtell D;

XX WPI; 1999-106060/09.

DR N-PSDB; AAX18270.

XX New isolated vertebrate telomerase genes - used to develop products for
XX treating cancers or for organ regeneration, nerve cell or brain cell
XX growth following injury or bone marrow transplantation.

XX Claim 4; Fig 11p-q; 134pp; English.

XX This sequence is a truncated human telomerase of the invention. Primers
XX that amplify the telomerase coding sequence can be used in a method for
XX diagnosing cancer in a patient. The telomerase can be used for detection,
XX diagnosis and drug screening. Inhibitors of telomerase activity can be
XX used to treat cancers such as melanomas, other skin cancers,
XX neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
XX lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
XX growths. Enhancers of telomerase may be used to stimulate stem cell
XX proliferation and differentiation (expansion of haematopoietic stem cells
XX could be administered in the bone marrow transplant context). As well,
XX many tissues have stem cells. Proliferation of these cells may be useful
XX in wound healing, hair growth, treatment of disease such as Wilms' e
XX tumour, organ regeneration or differentiation after injury or diseases,
XX nerve cell or brain cell growth following injury

XX Sequence 936 AA;

Query Match 82.7%; Score 4932; DB 2; Length 936;

Best Local Similarity 98.7%; Pred. No. 0;

Matches 935; Conservative 0; Mismatches 0; Indels 12; Gaps 1;

QY 1 MPRAPRCRAVRSLLRSHYREVLP

PLATFVRRLGPGQWRLVQRGDPAAPRALVAQCLVCVPW 60

1 MPRAPRCRAVRSLLRSHYREVLP

PLATFVRRLGPGQWRLVQRGDPAAPRALVAQCLVCVPW 60

61 DARPPAAPSPFQVSCLELVARVL

ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120

61 DARPPAAPSPFQVSCLELVARVL

ORLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120

Qy	121	SYLNTVTVDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Db	121	SYLNTVTVDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Qy	181	ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRGGASRSLPLPKRPRR	240
Db	181	ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRGGASRSLPLPKRPRR	240
Qy	241	GAAPEPERTVQGSWAHPGRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Db	241	GAAPEPERTVQGSWAHPGRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Qy	301	RQHAGPPSTSRPPRPWDTPCPPIVYAEKHFLLSYSSGDKQLRPSFLSSLRPSLTGARRL	360
Db	301	RQHAGPPSTSRPPRPWDTPCPPIVYAEKHFLLSYSSGDKQLRPSFLSSLRPSLTGARRL	360
Qy	361	VETIFLGSRRWPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Db	361	VETIFLGSRRWPGTTPRRLPRLPQRYWQMRPLFLELLGNHAQCPYGVLLKTHCPLRAAVT	420
Qy	421	PAAGVCAREXPOGSVAAPPEEDTPRLVOLLRHSSPWOVYGFVRACTLRRLVPPGLWGS	480
Db	421	PAAGVCAREXPOGSVAAPPEEDTPRLVOLLRHSSPWOVYGFVRACTLRRLVPPGLWGS	480
Qy	481	RHNERFLRNTKXFIISLGKHAKLSQLBTWKMSVRDCAWLRRSPGVGCVPAAEHLREEI	540
Db	481	RHNERFLRNTKXFIISLGKHAKLSQLBTWKMSVRDCAWLRRSPGVGCVPAAEHLREEI	540
Qy	541	LAKFLHLMVSVYVELLRSFYVTTTFQKNRLFYRKSWKLSQSIGIRQHLKRVOLRE	600
Db	541	LAKFLHLMVSVYVELLRSFYVTTTFQKNRLFYRKSWKLSQSIGIRQHLKRVOLRE	600
Qy	601	LSAEVRQHREARPAALLTSRLRTPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA	660
Db	601	LSAEVRQHREARPAALLTSRLRTPKPDGLRPIVNMDDYVVGARTFRREKKAERLTSRVKA	660
Qy	661	LFSVLNVERARRPGLLGASVLGLDDIHRWRTTFVLRVRAQDPPPELYFVVKDVTGAYDTI	720
Db	661	LFSVLNVERARRPGLLGASVLGLDDIHRWRTTFVLRVRAQDPPPELYFVK-----	710
Qy	721	PQRLTEVIASIIKPNQTYCVRVYAVVQKAAHGHRKAFKSHVSTLTDLPYMRQFVAHL	780
Db	711	--DRLTEVIASIIKPNQTYCVRVYAVVQKAAHGHRKAFKSHVSTLTDLPYMRQFVAHL	768
Qy	781	QETSPURDAVVIQSSSLNEASSGLDFVLRFWCHHAVIRGKSYVQCQIGIPOGSILSTL	840
Db	769	QETSPURDAVVIQSSSLNEASSGLDFVLRFWCHHAVIRGKSYVQCQIGIPOGSILSTL	828
Qy	841	LCSLCYGDMENKLFAGIRRDGLILRLVDLFTPLTHAKTFLRTLVRGVPEYGCVVNL	900
Db	829	LCSLCYGDMENKLFAGIRRDGLLLRLVDLFTPLTHAKTFLRTLVRGVPEYGCVVNL	888
Qy	901	RKTWNFPVDEALGGTAFVQMPAHGLFPWCGLLDTRTLLEVSQSDYS	947
Db	889	RKTWNFPVDEALGGTAFVQMPAHGLFPWCGLLDTRTLLEVSQSDYS	935
RESULT 46			
AAV00651			
ID	AAV00651 standard; protein; 936 AA.		
XX			
AC	AAV00651;		
XX			
DT	26-JUL-1999 (first entry)		
XX			
DE	Truncated telomerase (ver. 2) protein sequence lacking motif A.		
XX			
KW	Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;		
KW	neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;		
KW	smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;		
KW	stem cell differentiation; organ regeneration; organ differentiation.		
XX			

OS	Homo sapiens.		
OS	Synthetic.		
PN	WO9901560-A1.		
XX			
PD	14-JAN-1999.		
XX			
PF	01-JUL-1998; 98WO-US013835.		
XX			
PR	01-JUL-1997; 97US-0051410P.		
PR	21-JUL-1997; 97US-0053018P.		
PR	21-JUL-1997; 97US-0053329P.		
PR	04-AUG-1997; 97US-0054642P.		
PR	09-SEP-1997; 97US-0058287P.		
XX			
PA	(CAMB-) CAMBIA BIOSYSTEMS LLC.		
XX			
PI	Killian A, Bowtell D;		
XX			
DR	WPI; 1999-106060/09.		
DR	N-PSDB; AAX18279.		
XX			
PT	New isolated vertebrate telomerase genes - used to develop products for		
PT	treating cancers or for organ regeneration, nerve cell or brain cell		
PT	growth following injury or bone marrow transplantation.		
XX			
PS	Claim 4; Fig 11ak-al; 134pp; English.		
XX			
CC	This sequence is a truncated human telomerase of the invention. Primers		
CC	that amplify the telomerase coding sequence can be used in a method for		
CC	diagnosing cancer in a patient. The telomerase can be used for detection,		
CC	CC diagnosis and drug screening. Inhibitors of telomerase activity can be		
CC	used to treat cancers such as melanomas, other skin cancers,		
CC	CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,		
CC	CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin		
CC	CC growths. Enhancers of telomerase may be used to stimulate stem cell		
CC	CC proliferation and differentiation (expansion of haematopoietic stem cells		
CC	CC could be administered in the bone marrow transplant context). As well,		
CC	CC many tissues have stem cells. Proliferation of these cells may be useful		
CC	CC in wound healing, hair growth, treatment of disease such as Wilm's		
CC	CC tumour, organ regeneration or differentiation after injury or diseases,		
CC	CC nerve cell or brain cell growth following injury. Note: The N-terminus of		
CC	CC this sequence can be replaced by the sequences shown in AAY00656-Y00658		
XX			
SQ	Sequence 936 AA;		
Query Match 82.6%; Score 4923; DB 2; Length 936;			
Best Local Similarity 98.6%; Pred. No. 0;			
Matches 934; Conservative 0; Mismatches 1; Indels 12; Gaps 1;			
Qy	1	MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPQGWRLVQRGDPAAPRALVAOCLVCVPW	60
Db	1	MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPQGWRLVQRGDPAAPRALVAOCLVCVPW	60
Qy	61	DARPPPAAPSFQVSCLELVARVQLRCERGAKNVLAFGALLDARGGPPPEAFTTSVR	120
Db	61	DARPPPAAPSFQVSCLELVARVQLRCERGAKNVLAFGALLDARGGPPPEAFTTSVR	120
Qy	121	SYLNTVTVDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Db	121	SYLNTVTVDALRGSGAWGLLRRVGGDDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA	180
Qy	181	ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRGGASRSLPLPKRPRR	240
Db	181	ATQARPPPHASGPRRLGCRANWHSVREAGVPLGLPAPGARRGGASRSLPLPKRPRR	240
Qy	241	GAAPEPERTVQGSWAHPGRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Db	241	GAAPEPERTVQGSWAHPGRTGSDRGFCVVSPPARPAEATSLGALSGTRHSHPSVG	300
Qy	301	RQHAGPPSTSRPPRPWDTPCPPIVYAEKHFLLSYSSGDKQLRPSFLSSLRPSLTGARRL	360
Db	301	RQHAGPPSTSRPPRPWDTPCPPIVYAEKHFLLSYSSGDKQLRPSFLSSLRPSLTGARRL	360

[illegible]

PN	WO9821343-A1.
PD	
PP	22-MAY-1998.
PX	
PF	13-NOV-1997; 97WO-US021248.
XX	
PR	15-NOV-1996; 96US-00751189.
PR	11-JUN-1997; 97US-00873039.
PR	16-OCT-1997; 97US-00951733.
XX	
PA	(AMGE-) AMGEN INC.
PA	(AMGE-) AMGEN CANADA INC.
XX	
PI	Harrington LA, Robinson MO;
XX	
DR	WPI; 1998-297946/26.
DR	N-P8DB; AAV27872.
XX	
PT	New nucleic acid encoding human telomerase protein-2 - used for
PT	regulating telomerase activity, e.g. for treating cancer or acquired
PT	immune deficiency syndrome.
XX	
PS	Claim 1d; Fig 6; 150pp; English.
CC	This polypeptide comprises a large portion of human telomerase protein 2
CC	(TP2), a novel protein of the telomerase complex. Its amino acid sequence
CC	was deduced from partial cDNA clone 32 (see AAV27872), obtained from a
CC	human colon tumour cell line LIM1863 CDNA. A full-length polypeptide
CC	sequence (see AAWE1350) is also disclosed. Expressing TP2 in a cell is
CC	used to increase telomerase activity and thus proliferation for treatment
CC	of e.g. HIV infection, AIDS and ageing disorders, while expressing an
CC	inactive mutant of TP2 (or molecule antisense to the gene) is used to
CC	decrease telomerase activity, e.g. for treatment of cancer. TP2
CC	polypeptides can also be used to screen for agents that inhibit TP2
CC	activity or its binding to TRIP1 (see AAWE1347) or telomerase RNA,
CC	potentially useful therapeutically, also to raise specific antibodies
CC	useful in immunoassays and therapeutically as inhibitors. Also
CC	contemplated are transgenic animals in which the TP2 gene has been
CC	inactivated or is overexpressed. TP2 polypeptides are administered i.v.,
CC	s.c. or orally, or they are delivered from engineered cells or gene
CC	therapy vectors. (Updated on 25-MAR-2003 to correct PR field.)
XX	
SQ	Sequence 949 AA;
Query Match 82.2%; Score 4900; DB 2; Length 949;	
Best Local Similarity 100.0%; Pred. No. 0;	
Matches 92%; Conservative 0; Mismatches 0; Indels 0; Gaps 0	
Qy	1 MPRAPRCRAVRSLRSHYREVLPATFVRRIGPQGWRIVQRGDPAAFRALVAQCILVCVPW 60
Db	23 MPRAPRCRAVRSLRSHYREVLPATFVRRIGPQGWRIVQRGDPAAFRALVAQCILVCVPW 82
Qy	61 DARPPAAPRFQVSCUKELVARVLQRLCERGAKNVLAFGFALLDARGGPPEAFTTSVR 120
Db	83 DARPPAAPRFQVSCUKELVARVLQRLCERGAKNVLAFGFALLDARGGPPEAFTTSVR 142
Qy	121 SYLPTNTVDLRGGAGLLRLRVGDVDVHLHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
Db	143 SYLPTNTVDLRGGAGLLRLRVGDVDVHLHLLARCALFVLVAPSCAYQVCGPPLYQLGA 202
Qy	181 ATQARPFPFHASGPRRLRGCEARNHNSVREAGVPLGLPAGPARRRGGSASRSLPLPKRP 240
Db	203 ATQARPFPFHASGPRRLRGCEARNHNSVREAGVPLGLPAGPARRRGGSASRSLPLPKRP 262
Qy	241 GAAPERTPTVGQSWAHPGKTRGPSDRGF CVVSPARP AEATSLEGALSGTRHSHPSVG 300
Db	263 GAAPERTPTVGQSWAHPGKTRGPSDRGF CVVSPARP AEATSLEGALSGTRHSHPSVG 322
Qy	301 ROHHAGPPTSRRPRPWDTCP PPVYATKHFLSYSSGDK EQLRPSLSLSTGAREL 360
Db	323 ROHHAGPPTSRRPRPWDTCP PPVYATKHFLSYSSGDK EQLRPSLSLSTGAREL 382
Qy	361 VETIFLGSRPWPMPCTPRRLPRLPOR YQMWRPLFTLELLGNHAQCQPYGVLLKTHCP LRAAVT 420

Db 383 VETIFGSRPWPMTGTPRRRLPRLPQRYWQMRPLFLELGNHAQCPYGVLLKXTHCFLRAAVT 442
Qy 421 PAAGVCAREKPOGSVAAPEEEDTDPRRLVOLLRQHSSPQWYGVFVRACLRLRVPGLWGS 480
Db 443 PAAGVCAREKPOGSVAAPEEEDTDPRRLVOLLRQHSSPQWYGVFVRACLRLRVPGLWGS 502
Qy 481 RHNERFLRNTKXIFSLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 540
Db 503 RHNERFLRNTKXIFSLGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREEI 562
Qy 541 LAKEFLHLMVSVVVELLSRFYVTTETFOKNRLEFFYRKSWKLSQSIGIRHQLKRVOLRE 600
Db 563 LAKEFLHLMVSVVVELLSRFYVTTETFOKNRLEFFYRKSWKLSQSIGIRHQLKRVOLRE 622
Qy 601 LSEAEVRQREARPALITSRLRFPKDPGLRPTVNMVYVVGARTFRREKAERLTSRVKA 660
Db 623 LSEAEVRQREARPALITSRLRFPKDPGLRPTVNMVYVVGARTFRREKAERLTSRVKA 682
Qy 661 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 720
Db 683 LFSVLNVERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPPPELYFVKVDVTGAYDTI 742
Qy 721 PQORLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLOPYMRQFVAHL 780
Db 743 PQORLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLOPYMRQFVAHL 802
Qy 781 QETSPURDVAVVIQSSSLNEASSGLPDVFLRFMCHHAVRIRGKSYVQCQIGIPGSSILSTL 840
Db 803 QETSPURDVAVVIQSSSLNEASSGLPDVFLRFMCHHAVRIRGKSYVQCQIGIPGSSILSTL 862
Qy 841 LCSLCYGDMEKLFAGIRRDGLLLRLVDDPELLVTPHLTHAKTFLRTLVRGVPYGCVVNL 900
Db 863 LCSLCYGDMEKLFAGIRRDGLLLRLVDDPELLVTPHLTHAKTFLRTLVRGVPYGCVVNL 922
Qy 901 RKTVMNFPVDEALGGTAFVQMPAHGL 927
Db 923 RKTVMNFPVDEALGGTAFVQMPAHGL 949

RESULT 48

ADG90609
ID ADG90609 standard; protein; 1152 AA.

XX
AC ADG90609;

XX
DT 25-MAR-2004 (first entry)

XX
TX TERT consensus sequence SEQ ID NO:12.

DE
KW immune response; telomerase reverse transcriptase; TERT; cytostatic;
KW immunostimulant; cancer; cytotoxic T cell response.

XX
OS Unidentified.

XX
PN WO2004002408-A2.

XX
PD 08-JAN-2004.

XX
PF 24-JUN-2003; 2003WO-US019844.

XX
PR 27-JUN-2002; 2002US-0393295P.

XX
PA (GERO-) GERON CORP.

XX
PI Majumdar A, Ferber IA, Frolkis M, Wang Z;

XX
DR WPI; 2004-071946/07.

XX
PT Eliciting an immune response in a mammal specific for its own telomerase
PT reverse transcriptase (TERT), useful for treating or preventing cancer,
PT comprises administering a composition containing TERT of another
PT mammalian species.

XX
PS Claim 10; SEQ ID NO 12; 44pp; English.
XX
CC The invention relates to a novel method for eliciting an immune response
CC in a mammalian subject that is specific for its own telomerase reverse
CC transcriptase (TERT), comprising administering an immunogenic composition
CC containing a protein with at least 20 consecutive amino acids of TERT of
CC another mammalian species, or a nucleic acid encoding the protein. A
CC composition of the invention has cytostatic, and immunostimulant
CC activity. The protein or the nucleic acid encoding the protein is useful
CC in the manufacture of a medicament for the treatment of cancer in a human
CC or for eliciting a cytotoxic T cell response in a human.

XX
SQ Sequence 1152 AA;

Query Match 75.7%; Score 4515; DB 8; Length 1152;
Best Local Similarity 76.4%; Pred. No. 0;
Matches 880; Conservative 87; Mismatches 165; Indels 20; Gaps 6;

Qy 1 MPRAPRCRAVRSLRLSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAQCLVCVPW 60
Db 1 MPRAPRCRAVRSLRLSHYREVLPATFVRRRLGQGWRLVQRGDPAAFRALVAQCLVCVPW 60
Qy 61 DARPPPAASFRQVSCLELVARVQLORLCERGAKNVLAFAFALLDGAAGPPPAFTSVR 120
Db 61 GARPPPAASFRQVSCLELVARVQLORLCERGAKNVLAFAFALLDGAAGPPPAFTSVR 120
Qy 121 SYLPNTVTDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Db 121 SYLPNTVTTLRGSGAWGLLRRVGGDVLVHLLARCALYLLVAPSCAYQVCGPPLVOIGA 180
Qy 181 ATQARPPPHASG-PRRLG-----CERAMNHSVREAGVPLGLPAPGARRRGGSASRS 231
Db 181 TTQARPPPHASGPRPRPVGRNFTNLGFCERAMNHSVREAGVPLGLSPGAKRGGGSASRS 240
Qy 232 LPLPKPRRGAAPERTPTVQGSWAHPQRTGSPDRGFCVSPAPAEATSLGALSG 291
Db 241 LPLPKARRGAAPERTPTVQGSWTPSGRTRVPSDAGSPVSPAPAEBDLSKKGKVS 300
Qy 292 TRHSHPSVGRQHHAGPSTSRPRPMDTPCPPVYAEKHFYSSGGEOLRPSFLLSLR 351
Db 301 LSLSGSVCCCHKPSPSPSSPPRPNAFOLRPVYAEKHFYSSGGRERLRPSFLLSNLQ 360
Qy 352 PSLTGARRLVETIFLGSRPWPMTGTPRRRLPRLPQRYWQMRPLFLELGNHAQCPYGVLLKT 411
Db 361 PSLTGARRLVETIFLGSRPWTSGPLCTRHLSSRYWQMRPLFOELLGNHARCFYVLLRS 420
Qy 412 HCPLRAAVTPAAGVCAREKPOGSVAAPEE-----EDTDPRRLVOLLRQHSSPQWYGVFVR 466
Db 421 HCPLRAAAATPVAGALNTSPQGSVAAPEEVAAPQEQTSTRLMQLLRHSSPQWYGVFLR 480
Qy 467 ACLRLRVPPGLWGSRHNERFLRNTKXIFSLGKHAKLSLOELTWKMSVRDCAWLRRSPGV 526
Db 481 ACLCLVPPGLWGSRHNERFLKNVKKFISLGHAKLSLOELTWKMKVDCAWLRRSPGY 540
Qy 527 GCVPAAEHRLREILAK---FLHLMVSVVVELLSRFYVTTETFOKNRLEFFYRKSWKSWK 583
Db 541 ESVPAAEHRLRERILAKEHPFLFWMVSVVVELLSRFYVTTETFOKNRLEFFYRKSWKSWK 600
Qy 584 LOSIGIRQHLKRVQLRELSEAEVRQREARPALITSRLRFPKDPGLRPTVNMVYVVGAR 643
Db 601 LOSIGVROHLRVLRELSEAEVRQREARPAWPAWPAWPAWPAWPAWPAWPAWPAWPAW 660
Qy 644 TFRREKAERLTSRVKALFSLVNYERARRPGLLGASVLGLDDIHRAWRTFVLVRVRAQDPP 703
Db 661 AFRERKQAHFTQRLKTLFSLVNYERTKPHLLGASVLGMDIYRTWRTFVLVRVRAQDPP 720
Qy 704 PELYFVKVDVTGAYDTIPQORLTEVIASIIK-PONTYCVRRYAVVQKAAHGHVRKAFKSH 762
Db 721 PRMYFVADVAGTADAIPODKLVEVIANIRISESTYCIQYAVVQKAAHGHVRKAFKSH 780
Qy 763 VSTLTDLOPYMRQFVAHLQET--SPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVRI 820

Db 781 VSTLSLQPYMGQFLKHLQSDASALRNSVVIEQISINLEASSLSLDFLFLRLHRSVVKI 840
Qy 821 RGKSYVOCQIGPOGSIILSTLCSICYGDMENKLFAGIRRGGLLRLVDDFLVTPHLTHA 880
Db 841 GGRCYVOCQIGPOGSIILSTLCSICYGDMENKLFAGIRRGGLLRLVDDFLVTPHLTHA 900
Qy 881 KTFRLTLVRGVEPYGCVVNLKRTVVNFPVDEALGGTAFVQMPAHGLFPWCGLLDTRL 940
Db 901 KTFRLTLVRGVEPYGCVVNLKRTVVNFPVDEALGGTAFVQMPAHGLFPWCGLLDTRL 960
Qy 941 EVQSDYSYARTSIRASLTNRGFKAGNNRRKLFVLRKLSLFLDLQVNSLQVCTN 1000
Db 961 EVFCDYSYARTSIRASLTNRGFKAGNNRRKLFVLRKLSLFLDLQVNSLQVCTN 1020
Qy 1001 IYKILLQAYREHACVLOLPHQVQVKNPTFELRVISDTASLCYSILKAKNAGMSLGAKG 1060
Db 1021 IYKILLQAYREHACVLOLPHQVQVKNPTFELRVISDTASLCYSILKAKNAGMSLGAKG 1080
Qy 1061 AAGPLPSEAVQWLCHQAFLLKLTNRHVVYVPLLSLRTAQTLQSLKLPFGTTLTALEAAN 1120
Db 1081 AAGPLPSEAVQWLCHQAFLLKLTNRHVVYVPLLSLRTAQTLQSLKLPFGTTLTALEAAN 1140
Qy 1121 PALPSDKTILD 1132
Db 1141 PALSTDFQITLD 1152

RESULT 49
AAW46997
ID AAW46997 standard; protein; 807 AA.
XX AAW46997;
AC AAW46997;
XX AAW46997;
DT 13-AUG-1998 (first entry)
XX Human telomerase reverse transcriptase Delta182 variant.
DE Human telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX Synthetic.
OS Homo sapiens.
XX GB2317891-A.
PN 08-APR-1998.
XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1997; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.
XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;
XX WPI; 1998-171633/16.
DR N-PSDB; AA22382.
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.
XX Disclosure; Fig 20; 387pp; English.
XX

CC The present sequence represents a human telomerase reverse transcriptase
CC (hTERT) variant from the present invention. The present invention also
CC describes the following methods: (A) determining whether a test compound
CC is a modulator of hTERT, by detecting the change in hTERT recombinant
CC protein or polynucleotide, on administration of the compound; (B)
CC preparation of recombinant telomerase by contacting a protein preparation
CC of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or
CC protein in a sample by binding a relevant probe to the sample and
CC detecting the complex formed or in the case of RNA detection, amplifying
CC the product and correlating the presence of complex or amplification
CC product with presence of hTERT in the sample; and (D) increasing the
CC proliferation of a vertebrate cell by increasing hTERT expression; and (E)
CC the use of an agent that causes an increase in cell vertebrate cell
CC proliferation to create a medicament that inhibits ageing. A protein
CC preparation of hTERT and the polynucleotide encoding hTERT can be used in
CC the manufacture of medicaments for inhibiting the effect of ageing or
CC cancer. Inhibitors of telomerase activity can be used to treat conditions
CC that are associated with high telomerase activity. A protein preparation
CC of hTERT can also be used in the new methods
XX
XX Sequence 807 AA;
SQ
Query Match 68.0%; Score 4052; DB 2; Length 807;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 763; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSLLSHYREVLPATFVRRLGPOQWRLVQRGDPAAFRALVAQCVCVPM 60
DB 1 MPRAPRCRAVRSLLSHYREVLPATFVRRLGPOQWRLVQRGDPAAFRALVAQCVCVPM 60
QY 61 DARPPPAAPSPQVNSCLKELVARVQLRCERGAKNVLPAGFALLDGGGPEAETTSVR 120
DB 61 DARPPPAAPSPQVNSCLKELVARVQLRCERGAKNVLPAGFALLDGGGPEAETTSVR 120
QY 121 SYLPTNTVDALRGSGAWGLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 121 SYLPTNTVDALRGSGAWGLLRRVGDVLLVHLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGAPARRRGGSASRSLPLPKRRR 240
DB 181 ATQARPPPHASGPRRLRCERAWNHSVREAGVPLGAPARRRGGSASRSLPLPKRRR 240
QY 241 GAAPERTPVQGSWAHPGTRGSDRGFCVSPARPAEATSLGALSGTRHSHPSVG 300
DB 241 GAAPERTPVQGSWAHPGTRGSDRGFCVSPARPAEATSLGALSGTRHSHPSVG 300
QY 301 RQHAGPSTSRPRPMDTPCPVYAEKFLYSSGDKQLRPSFLLSLRPSLTGARRL 360
DB 301 RQHAGPSTSRPRPMDTPCPVYAEKFLYSSGDKQLRPSFLLSLRPSLTGARRL 360
QY 361 VETIFLGSRPWPGTPRRLPRLPQRYWQMRPLFLELGNHAQCPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGSRPWPGTPRRLPRLPQRYWQMRPLFLELGNHAQCPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRLVQLLRHSSPWQVYGFVACRLRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEDTDPRLVQLLRHSSPWQVYGFVACRLRLVPPGLWGS 480
QY 481 RHNERRFLRNTKTFISLGKHAQLSLQELTWQSVRDCAWLRSPGVGCPAAEHLRBEI 540
DB 481 RHNERRFLRNTKTFISLGKHAQLSLQELTWQSVRDCAWLRSPGVGCPAAEHLRBEI 540
QY 541 LAKFLHLMVSVVVELLSRFFYVTTFTFQKRLFFYKSVWSKLSQSGIRQHLKRVQURE 600
DB 541 LAKFLHLMVSVVVELLSRFFYVTTFTFQKRLFFYKSVWSKLSQSGIRQHLKRVQURE 600
QY 601 LSEAEVRQREARPAALLTSRLRFIPKPDGLRPIVNMVYVVGARTFRREKRAERTLSRVA 660
DB 601 LSEAEVRQREARPAALLTSRLRFIPKPDGLRPIVNMVYVVGARTFRREKRAERTLSRVA 660
QY 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNVERARRPGLLGASVLGLDDIHRWRTFVLVRAQDPPPELYFVKVDVTGAYDTI 720

XX 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX (CAMP-) CAMBIA BIOSYSTEMS LLC.
XX Kilian A, Bowtell D;
PI WPI; 1999-106060/09.
DR N-PSDB; AAX18274.
XX New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
XX Claim 4; Fig 11x-y; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY06556-Y06658
XX
XX Sequence 807 AA;

Query Match 68.0%; Score 4052; DB 2; Length 807;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 763; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHYREVLPLATFVRRRLGQGWRLVQRGDPAAFRALVAQCLVCVPW 60
DB 1 MPRAPRCRAVRSLLRSHYREVLPLATFVRRRLGQGWRLVQRGDPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAAPSFROVSCCLKELVARVLQRLCERGAKNVLAFGFALLDGCARGPPEAFTTSVR 120
DB 61 DARPPPAAPSFROVSCCLKELVARVLQRLCERGAKNVLAFGFALLDGCARGPPEAFTTSVR 120
QY 121 SYLPTNTVTDALRGSGAWGLLRRVGGDDVLVHLIARCALFVLVAPSCAYQVCGPPPLYQLGA 180
DB 121 SYLPTNTVTDALRGSGAWGLLRRVGGDDVLVHLIARCALFVLVAPSCAYQVCGPPPLYQLGA 180
QY 181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGSGASRSLPLPKRPRR 240
DB 181 ATQARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPGARRRGSGASRSLPLPKRPRR 240
QY 241 GAAPEPERTPVGGSWAHGPRTRGSDRGFCVVSPPARPAEATSLGALSCTGTHSHPSVG 300
DB 241 GAAPEPERTPVGGSWAHGPRTRGSDRGFCVVSPPARPAEATSLGALSCTGTHSHPSVG 300
QY 301 RQHAGPPSTSRPPRPWDTPCPVPVYAEHTKHFLYSSGDKQLRPSFLLSLRPSLTGARRL 360
DB 301 RQHAGPPSTSRPPRPWDTPCPVPVYAEHTKHFLYSSGDKQLRPSFLLSLRPSLTGARRL 360
QY 361 VETIFLGSPPWPGTPRRLLPRLPQRYQWRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGSPPWPGTPRRLLPRLPQRYQWRPLFLELLGNHACQPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEEDTDPRLLVOLLAROHSSPMOVYGFVRACLRLVPPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEEDTDPRLLVOLLAROHSSPMOVYGFVRACLRLVPPGLWGS 480

QY 481 RHNERFLRNTKFFISLGHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREBI 540
DB 481 RHNERFLRNTKFFISLGHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAAEHRLREBI 540
QY 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLFYFRKSVWSKLOSIGIRQHLKRVQLRE 600
DB 541 LAKFLHMLMSVYVVELLSRFFVYVTTTFOKNRLFYFRKSVWSKLOSIGIRQHLKRVQLRE 600
QY 601 LSEAEVROHREARPALLTSRLRFPKPDGLRDIYVMDYVVGARTFRREKRAERLTSRVKA 660
DB 601 LSEAEVROHREARPALLTSRLRFPKPDGLRDIYVMDYVVGARTFRREKRAERLTSRVKA 660
QY 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRQAODPPPELYFVKVDVTGAYDTI 720
DB 661 LFSVLNYERARRPGLLGASVLGLDDIHRAWRTFVLVRQAODPPPELYFVKVDVTGAYDTI 720
QY 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 763
DB 721 PQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 763
RESULT 52
ADD21416
ID ADD21416 standard; protein; 1128 AA.
XX AC ADD21416;
XX DT 15-JAN-2004 (first entry)
XX DE Golden hamster TERT protein related to continual cell growth.
XX DE continual growth; cultured cell; cyclin dependent kinase; cdk4; cdk2;
KW cdk6; activating mutation; cell growth; cell division; cell cycle;
KW cancer-causing agent; continual growth-induced cell; enzyme; TERT;
KW telomerase; Golden hamster.
XX
OS Mesocricetus auratus.
XX
PN WO2003044169-A2.
XX
PD 30-MAY-2003.
XX
PF 15-NOV-2002; 2002WO-US036729.
XX
PR 15-NOV-2001; 2001US-0334760P.
XX
PA (UTEM) UNIV TEMPLE.
XX
PI Reddy PE, Rane SG, Mettuss RV;
XX
WPI; 2003-449813/42.
XX
PT A composition for reversibly inducing continual growth in normal cells
PT comprises a cyclin dependent kinase protein (e.g. cdk4, cdk2 or cdk6) or
PT its active fragment, derivative, homolog or analog, having an activating
PT mutation.
XX
PS Disclosure; Page 119-121; 77pp; English.
XX
CC This invention relates to a novel composition for inducing a reversible
CC state of a continual growth in cultured cells and comprises at least one
CC compound comprising a cyclin dependent kinase (cdk)4, cdk2 or cdk6
CC protein having an activating mutation. Growth and division of living
CC cells involve a regular series of events and processes that comprise the
CC cell cycle. Cyclin dependent kinases cdk2, cdk4 and cdk6 are involved in
CC the control of G1, the point at which cells irrevocably commit to DNA
CC synthesis and thus enter the cell cycle. The invention is useful in
CC reversibly inducing continual growth in normal cells and may allow the
CC screening of cancer-causing agents with the continual growth-induced
CC cells. The present sequence is that of the golden hamster TERT protein,
CC the catalytic subunit of telomerase, related to the invention. Note: Due
CC to an error in the specification or sequence listing, the Seq ID numbers

Db 1 MPRAPCRAVALLRSQYQVWVPLATFVRLGPEGRQLVQVDPKVFRTLVARCLVCVPW 60
Qy 61 DARPPPAAPSROVSCLEKELVARVLQRLCERGAQVNLAFGALLDARGGPPFAFTTSVR 120
Db 61 DSQPPPADLSFHQVSSKELVARVQQLCERGERNLVTFGALLNGAQQGPPMTFTTSVR 120
Qy 121 SYLNTVTDALRGSGAGLLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180
Db 121 SYLNSVYESLRVSGAMLLNLRVGGDVLVHLLARCALYLLVPPSCAYQVCGSFLVQICA 180
Qy 181 ATQARPP- PHASGPRRLG-----CERAWNHSVREAGVPLGLPAPGARRRGGGSASRS 231
Db 181 TAETWPSVSRIRYRTRPVRGNFTHLGSTHRVNRSSHQEAWKPPPLPSEAREKSLSTNRS 240
Qy 232 LPLPKRRRGAAPERTPVQGSWAHPGTRGPSDRGFCVVSAPAR-----PAREATSLEG 287
Db 241 VPSKARCDLAPLEKGPYRQA-----VPTPSDKTW-VNPAKSHAVIPSRTTK-ED 291
Qy 288 ALGSTRHSPSVGRQ-----HHAGPPSTS-RPP-----RPWDTPCPPVYAETKHFLYS 334
Db 292 LSSGVK--APGLSRSGVCYKHKPSSTSLQSPLCQNAFLRP-----YTETKFLYS 341
Qy 335 -SGDKEQLRPSFLSSURPSLTGARLIVETIFLGSRPMPGTPRRLPRLPQVWQMRPLF 393
Db 342 REGRELRNPSFLNNLQPSLTGARLIVETIFLGMRPRTSGPLCGRRRLSKRYWQMRPLF 401
Qy 394 LELLGNHAQCPYGVLLKTHCPRAAVTPAAGVCAREKPGQSVAAPEEEDTPRLVQLAR 453
Db 402 QQLLVNHARCPYVLLRASHCRFTAHOVAGAL-----NTTSPQRLMNLRL 447
Qy 454 QHSSPQVQYGFVRACLRLPPLGLWSRHNRRFLRNTKFKFISLGHKAKLSLQELTWKMS 513
Db 448 LHSSPQVQYGLQACVGLVPPGLWSRHNRRFFKNVKEFISLGHKAKLSLQELTWKMK 507
Qy 514 VRDCAWLRRSPGVCVPAAEHRLREELAKPLHLMSVYVVELLRFFVYTTTPOKRL 573
Db 508 VQDCRMLRSPGNCVPAAEHRTREIRLAVLEFLMDAYVVELLRFFVYTTTPOKRL 567
Qy 574 FFYKRSVWSKLOSIGIRQHLKRYQLRELGEAEVROHREARPAALLTSRLRFIPKDGRLPI 633
Db 568 FFYKRSWRELQIGVRRHLERVLQELSGEEVROQEAWPAMPICLRFIPKPSGLRFI 627
Qy 634 VMDYVVGARTFPRKRAERLTSRVKALFSLVNLRYERARRPGLIGASVLGLDLDIHRAWRTF 693
Db 628 VNMSY-MGTRAFDQKQAQHTQCLKTLFSLVNLRYELTKHTNLGLASVLGLNDIYRTWTF 686
Qy 694 VLRVRAQDPPPELYFVKVDVTGAYDTIPDRLTEVTASIIK-PONTYCVRRVAVQKAAH 752
Db 687 VLRVRLDPAPRMYFVKADVGTGAYDAIPQDKLVEVIANNIRHPDINSYCIHQYAVVQRDRQ 746
Qy 753 GHVRKAFKSHVSTLTLQPMYRQFVAHLQ--ETSPRLDAVTEQSSLSNEASGLFDVFL 810
Db 747 GQIHKSFRRQVSTLSDLPQHMGGFLXHLQSDTSALRNSVIEQSLSLNEASSLSDFDL 806
Qy 811 RFMCHAVIRKSYVQCOGIPQGSSTLTLCSLCYGDMDENKLFAGIRRDGLLRLVDDF 870
Db 807 RFVRNSVWIRGGRYVQCOGIPQGSSTLTLCSLCFGMDENKLFAGVQDGLLRVDDF 866
Qy 871 LLVTPHLTHAKTFLRTLVRGVEYGVNLKRTVNFVVEDEALGCTAFVQVPAHGLFPW 930
Db 867 LLVTPHLVQAEFLRALVGIPEYGCWMLQKTVNFPVDAGTLDGTAFPHQLPAHCLFPW 926
Qy 931 CGLLDTRTLEVDQSYSSYARTSIRASLTFNRGFKAGRNRRKLFGLVRLKCHSLFLDLQ 990
Db 927 CGLLDTRTLEVDQSYSSYARTSIRASLTFNRGFKAGRNRRKLFGLVRLKCHSLFLDLQ 986
Qy 991 VNSLQVTCNIIKYLLOAYRPHACVQLQPFHQVQVWKNPTFFLRVISTASLCYSILKAK 1050
Db 987 MNSLQVTCNIVKIFLLOAYRPHACALQLPFDQHVVRKNPAFFLSIISNIASCYSILKVK 1046
Qy 1051 NAGMSLGAGAGPLPSEAVOMLCHQAFLLKLTTRHRTVTVPLLSRTAQTOLSKLPCT 1110
Db 1047 NAGMTLKAGAGSGSPPEARWLCYQAFLLKLAGHSVITYKCLGLPRLTAQKQCRKLPRA 1106

Qy 1111 TLTALAAANPALPSDFKTILD 1132
Db 1107 TMAILETAADPALSTDFQTILD 1128
RESULT 54
AY26579
ID AAY26579 standard; protein; 1122 AA.
XX
AC AAY26579;
XX
DT 13-SEP-1999 (first entry)
XX
DE Murine telomerase reverse transcriptase (mTERT) enzyme.
XX
KW Telomerase reverse transcriptase; TERT; mouse; telomere length assay;
XX
OS immunogen; enzyme; telomerase-mediated DNA replication.
XX
PN Mus sp.
XX
PD WO9927113-A1.
XX
PF 03-JUN-1999.
XX
PR 25-NOV-1998; 98WO-US025211.
XX
PR 26-NOV-1997; 97US-00979742.
XX
PR 16-MAR-1998; 98US-00042460.
XX
PA (GERO-) GERON CORP.
XX
PA (YESH-) UNIV YESHIVA EINSTEIN COLLEGE.
XX
PI Morin GB, Allsopp R, Depinho R, Greenberg R;
XX
DR WPI; 1999-347722/29.
XX
DR N-PSDB; AAX80994.
XX
PS Mouse telomerase reverse transcriptase (mTERT) enzyme proteins and
XX
PS Claim 8; Fig 2; 135pp; English.
XX
CC The invention relates to a mouse telomerase reverse transcriptase (mTERT)
XX
CC enzyme. Compositions containing mTERT can be used in telomere length
XX
CC assays. Isolated mTERT is useful as an immunogen for the production of
XX
CC monoclonal or polyclonal antibodies. The method is useful for assessing
XX
CC the degree of purification and identification of new mTERT species, such
XX
CC as an mTERT allele, homolog or isoform, or to screen for modulators
XX
CC (antagonists and agonists) of telomerase-mediated DNA replication.
XX
CC Antagonists and agonists of mTERT can be used to modify the activity of
XX
CC other telomerase enzymes such as human TERT (hTERT). The present sequence
XX
XX represents a mTERT enzyme
XX
SQ Sequence 1122 AA;
Query Match 58.8%; Score 3505; DB 2; Length 1122;
Best Local Similarity 62.4%; Pred. No. 2.2e-285;
Matches 719; Conservative 122; Mismatches 260; Indels 52; Gaps 13;
Qy 1 MPRAPCRAVALLRSVREVLPLATFVRLGPEGRQLVQVDPKVFRTLVARCLVCVPW 60
Db 1 MTRAPCPAVSLRLSRVREWWPLATFVRLGPEGRQLVQVDPKVFRTLVARCLVCVPW 60
Qy 61 DARPPPAAPSROVSCLEKELVARVLQRLCERGAQVNLAFGALLDARGGPPFAFTTSVR 120
Db 61 GSQPPPADLSFHQVSSKELVARVQQLCERGERNLVTFGALLNGAQQGPPMTFTTSVR 120
Qy 121 SYLNTVTDALRGSGAGLLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180
Db 121 SYLNTVIELRVSGAMLLNLRVGGDVLVHLLARCALYLLVPPSCAYQVCGSFLVQICA 180
Qy 181 ATQARPPPHAS-GPRRLG-----CERAWNHSVREAGVPLGLPAPGARRRGGGSASRS 231

Db 181 TTDIWPVSASYPRTVRGNFTNLRFLQOIKSSRQEAAPKPLALPSRGTKRHLSTSTS 240
Qy 232 LPLPKRRGAAPERTPVQGSWAHPGTRGSPDRGFCVVSAPAR-----PAEEATSL 286
Db 241 VPSAKKARCPVPRVEGSP-----HRQVLPPTSGKSW-VPSPARPEVPTAEKOLSSK 292
Qy 287 GALSCTRHSHPSVGRQHAGPPSTSPRPMDTCCPPVYAETKHLYSSGD-KEQLRPSF 345
Db 293 GKVSLSLS-GSVCKKPSSTLSLSPRQNAFLRP-FIETRHFLYSRGDGERLNPSF 350
Qy 346 LLSSLRSLTGARRLVETIFLGSRWMPGTPRRLPRLPQRYWQMRPLFELLGNHACOPY 405
Db 351 LLSNLQNLGARRLVETIFLGSRTSPGLCRTHLSRRYQWQMRPLFQQLLVNHAECQY 410
Qy 406 GVLLKTHCPLRAA---VTPAAGVCAREKPGQSVAAPEEDTPRRLVOLLROHSSPMQVY 462
Db 411 VLLRSHCRFTANQVTDAL-----NTSPHMLDMLRLHSSPMQVY 452
Qy 463 GFVRACLRRLVPPGLWGSRRNRRFLNTKKFISLGHAKLSLOELTWKMSVRDCALRR 522
Db 453 GFRLACLCVVVASLWGTNRNRRFFKNLKKFISLGYKLSLQELMKMKVEDCHWLS 512
Qy 523 SPGVGCVPAAEHRLREILAKFLHLMMSVYVVELLSRFFVTTTFOKNRLLPFYRKSVMS 582
Db 513 SPGKDRVPAAEHRLRERILATFLFWMMDTYVQLLRSFFYITESTFOKNRLLPFYRKSVMS 572
Qy 583 KLSIGIRHQLKRVOLRELSAEVROHREARPAALLTSRLRFIPKPDGLRPVNMVYVGA 642
Db 573 KLSIGVRQHLERVLRELQOEVRHHQDTWLAMPICRLRFIPKPNGLRPVNMVYSGMT 632
Qy 643 RTFRREKRAELTSRVKALFSVLNYERARRPGLLGASVLGLDDITHRAWRTFVLVRQAQP 702
Db 633 RALGRKQAQHFQRLKATLFSMLNYERTKPHLMGSSVLGMDIYRTWRAFLVRALDQ 692
Qy 703 PPELYFVKVDVTGAYDTPIDRLTEVTSIIK-PONTYCVRRVAVVQKAHGHVRKAFKS 761
Db 693 TPRMYFVKADVTGAYDAIPQGLVEVVANNIRHSESTYCIQYAVVRDSSQGVHKSFR 752
Qy 762 HVSTLTDLQPMQGFVAHLOET--SPLRDAVVTQSSSLNEASSGLFDVLRFWCHAVR 819
Db 753 QVITLSLQPMQGFVHLOET--SPLRDAVVTQSSSLNEASSGLFDVLRFWCHAVR 812
Qy 820 IRGKSYVQCQIGIPQGSSTLSCSLCYGDMENKLFAGIRRDGLLRLVDDFLVTPHLTH 879
Db 813 IGDRCYTQCQIGIPQGSSTLSCSLCYGDMENKLFAGIRRDGLLRLVDDFLVTPHLTH 872
Qy 880 AKTFLRTLVRGPEYGVGNLRTVNNPVEDEALGTAQVQMPAHGLFPWCGLLLDTRT 939
Db 873 AKTFLRTLVRGPEYGVGNLRTVNNPVEDEALGTAQVQMPAHGLFPWCGLLLDTRT 932
Qy 940 LEVOSDYSSARTSIRASLTFRNGFKAGRNRRKLFQVTLRKCHSLFLDLQVNSLOTVCT 999
Db 933 LEVCDISGVAQTSIKTSLTFQSVFKAGTKMRNKLKSLVRLKCHGLFLDLQVNSLOTVCI 992
Qy 1000 NIYKILLQAYRHHACVQLQPFHQQVWKNPTFFLRVISTASLCYSTILKAKNAGMSLGAK 1059
Db 993 NIYKIFLLQAYRHHACVQLQPFHQQVWKNPTFFLRVISTASLCYSTILKAKNAGMSLGAK 1052
Qy 1060 GAGKPLPSEAVQMLCHQAFLLKLTTRHRTVYVPLLSLRRTAQTLQSRKLPPTTITALEAAA 1119
Db 1053 GS---FPPEAAHWLCYQAFLLKLAHSHVYKCLLGLPLRTAQKLLCRKLPATWTILKAAA 1109
Qy 1120 NPALPSDFKTILD 1132
Db 1110 DPALSTDFQTILD 1122

RESULT 55
ADG90601
ID standard; protein; 1122 AA.
XX
AC ADG90601;

XX 25-MAR-2004 (first entry)
XX Murine TERT SEQ ID NO:4.
DE mouse; immune response; telomerase reverse transcriptase; TERT;
KW cytotostatic; immunostimulant; cancer; cytotoxic T cell response.
XX Mus sp.
XX WO2004002408-A2.
XX 08-JAN-2004.
XX 24-JUN-2003; 2003WO-US019844.
XX 27-JUN-2002; 2002US-0393295P.
XX (GERO-) GERON CORP.
XX Majumdar A, Ferber IA, Frolkis M, Wang Z;
XX WPI; 2004-071946/07.
XX N-PSDB; ADG90600.
PT Eliciting an immune response in a mammal specific for its own telomerase
PT reverse transcriptase (TERT), useful for treating or preventing cancer,
PT comprises administering a composition containing TERT of another
PT mammalian species.
XX Claim 10; SEQ ID NO 4; 44pp; English.
XX The invention relates to a novel method for eliciting an immune response
CC in a mammalian subject that is specific for its own telomerase reverse
CC transcriptase (TERT), comprising administering an immunogenic composition
CC containing a protein with at least 20 consecutive amino acids of TERT of
CC another mammalian species, or a nucleic acid encoding the protein. A
CC composition of the invention has cytostatic, and immunostimulant
CC activity. The protein or the nucleic acid encoding the protein is useful
CC in the manufacture of a medicament for the treatment of cancer in a human
CC or for eliciting a cytotoxic T cell response in a human.
XX
SQ Sequence 1122 AA;
Query Match 58.8%; Score 3505; DB 8; Length 1122;
Best Local Similarity 62.4%; Pred. No. 2.2e-285; Indels 52; Gaps 13;
Matches 719; Conservative 122; Mismatches 260;
Qy 1 MPRAPRCRAVRSLLRSHYREVLPATFVRRLGPGWRLVQRGDPAPAFRALVAQCLVCVPW 60
Db 1 MTEAPRCAPVRSLLRSHYREVLPATFVRRLGPGWRLVQRGDPAPAFRALVAQCLVCVHW 60
Qy 61 DARPPAAAPSFVQVSCIKELVARVQLRCLRGKAVNLAFGALLDARGGPPPAFTTSVR 120
Db 61 GSOPPPADLSFHQVSSKELVARVQLRCLRGKAVNLAFGALLDARGGPPPAFTTSVR 120
Qy 121 SYLPTNTVTALRGSGAWGLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Db 121 SYLPTNTVTALRGSGAWGLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Qy 181 ATOARPPPHAS-GPRRLRG-----CERAMHWSVREAGVPLGLPAPGARRRGSSASRS 231
Db 181 TTDIWPVSASYPRTVRGNFTNLRFLQOIKSSRQEAAPKPLALPSRGTKRHLSTSTS 240
Qy 232 LPLPKRRGAAPERTPVQGSWAHPGTRGSPDRGFCVVSAPAR-----PAEEATSL 286
Db 241 VPSAKKARCPVPRVEGSP-----HRQVLPPTSGKSW-VPSPARPEVPTAEKOLSSK 292
Qy 287 GALSCTRHSHPSVGRQHAGPPSTSPRPMDTCCPPVYAETKHLYSSGD-KEQLRPSF 345
Db 293 GKVSLSLS-GSVCKKPSSTLSLSPRQNAFLRP-FIETRHFLYSRGDGERLNPSF 350
Qy 346 LLSSLRSLTGARRLVETIFLGSRWMPGTPRRLPRLPQRYWQMRPLFELLGNHACOPY 405

Db 351 LLSNLQNLGARRLVEIIFLGRSPTSGPLCRTHLSRRYQWRPLFQQLLVNHAECQY 410
Qy 406 GVLLKTHCPLEAA---VTPAAGVCAREKPGQSVAAPEEDTDPRLLVQLLRQHSPPQVY 462
Db 411 VLLRSHCRFTANQVTDAL-----NTSPHMLDLLRLHSSPWQVY 452
Qy 463 GFVRACLRLVPPGLWGSRRNRRFLNKKFISLGKHAKLSLOELTWKMSVRDCAWLR 522
Db 453 GFLRACLCKVVSASLWGTNRNRRFFKNLKKFISLGKYGKLSLOELMKWKMVEDCHWLS 512
Qy 523 SPGVGCVPAAEHRLREILAKFLHLMMSVYVVELLSFFVYTTTFQKNRLFYRKSVMS 582
Db 513 SPGKDRVPAAEHRLRERILATFLWMDTVVQLLSFFYITESTFQKNRLFYRKSVMS 572
Qy 583 KLOSIGIRHLKRVQLRELSAEVROHREARPAALLTSRLRFIPKPDGLRPIVMDYVGA 642
Db 573 KLOSIGVROHLRVLRELSQEEVRRHODTWLAMPICRLRFIPKPNGLRPIVNMVSMGT 632
Qy 643 RTFREKRAERLTSRVKALFSVLNYERARRPGLLGASVLGDDIHRARWTFVLRVRAODP 702
Db 633 RALGRKQAOHFQRLKTLFSMLNYERTKPHLMGSSVLGMDIYRTWRAFVLRVRLDQ 692
Qy 703 PPELYFVKVDTGAYDIPQDRLETVIASIIK-PONTYCVRRYAVVQKAAHGHVRKAFKS 761
Db 693 TPRMYFVKADVTGAYDAIPQGLVEVNVANMIRHSESTYCIQYAVVRRDSQGQVHKSPRR 752
Qy 762 HVSTLTDLPYMQQFVAHLQET--SPLRADAVVIEQSSSNEASSGLFDVFLRPMCHAYR 819
Db 753 QVTTLSDLQYMGQFLKHLQSDASALRNSVWIEQSIWMNESSSLFDFPLHFLRHSVVK 812
Qy 820 IRGKSVYQCOGIPQGSILSTLLCSLCYGD MENKLFAGIRRDGLLLRLVDLFLAVTPLH 879
Db 813 IGDRCYTQCOGIPQGSLSLTLCSLCGDMENKLFVQVQDGLLLRFVDDFLVTLHLDQ 872
Qy 880 AKTFLRTLVRGVEYGCVMNLRTVNVFPVEDEALGATAFVQMPAHGLFPWCGLLDDRT 939
Db 873 AKTFLSLTVHGVPEYGCVMNLQKTVMNFPVEPGTLGGAAPQLPAHCLFPWCGLLDDTQ 932
Qy 940 LEVQSDYSSVARTSIRASLTFRNGKAGRNMRKLFGLVRLKCHSLFLDLQVNSLQTVCT 999
Db 933 LEVFCDSYGAQTSIKTSLTSQVFKAGTKMRNKLJSLVRLKCHGLFLDLQVNSLQTVCI 992
Qy 1000 NIYKILLQAYRFHACVLQLPFFHQVQVKNPTFFFLRVISDTASLCYSILKAKNAGMSLGAK 1059
Db 993 NIYKIFLQAYRFHACVQLPFPQVRKNLTFFLGIISQASCYAILKVKPGMTLKAS 1052
Qy 1060 GAAGPLPSEAVQMLCHQAFLLKLTTRHRTVYVPLLSRLTAQTOLSRKLPGTTLTALEAAA 1119
Db 1053 GS---FPPEAAHWLCYQAFLLKLAHSHVYKCLLGLPLRTAQLKCLPEATWTLKAAA 1109
Qy 1120 NPALPSDFKTILD 1132
Db 1110 DPALSTDFQTILD 1122

RESULT 56
ID ABB06711
AC ABB06711 standard; protein; 1122 AA.
XX ABB06711;
XX
DT 11-JUN-2002 (first entry)
XX
DE Mouse telomerase protein sequence.
XX
KW Mouse; telomerase; promoter; telomerase catalyst subunit; TERT; mTERT;
KW enzyme; transgenic mouse; drug development; anticancer.
XX
OS Mus sp.
XX
PN JP2002000121-A.
XX

PD 08-JAN-2002.
XX
PF 23-JUN-2000; 2000JP-00190137.
XX
PR 23-JUN-2000; 2000JP-00190137.
XX
PA (RIKO-) ZH RIKOGAKU SHINKOKAI.
XX (KIRI) KIRIN BREWERY KK.
XX
XX WPI; 2002-298279/34.
XX
PT A transgenic mouse comprising a DNA promoter region of mouse telomerase
PT catalyst subunit (TERT) is used for the development of drugs and
PT anticancer agents for regeneration of tissues and organs.
XX
PS Disclosure; Fig 3; 13pp; Japanese.
XX
CC The present invention describes a transgenic mouse (1) comprising a DNA
CC construct having a DNA containing a promoter region of mouse telomerase
CC catalyst subunit (TERT) and a DNA containing a reporter gene connected
CC under the control of the promoter region. The transgenic mouse can be
CC used in the development of drugs and anticancer agents for regeneration
CC of tissues and organs. The present sequence represents the mouse
CC telomerase protein, which is given in the exemplification of the present
CC invention
XX
SQ Sequence 1122 AA;

Query Match 58.3%; Score 3475; DB 5; Length 1122;
Best Local Similarity 61.9%; Pred. No. 7, 4e-283;
Matches 714; Conservative 121; Mismatches 266; Indels 52; Gaps 12;

Qy 1 MPARPCRAVRSLLRSHREVLPVPLATFVRRLGPGQWRVLVQRGDPAARFALVAQCLVCPW 60
Db 1 MTRAPRCFAVRSLLRSHREVLPVPLATFVRRLGPGQWRVLVQRGDPAARFALVAQCLVCPW 60
Qy 61 DARPPAPAPSPQVSCLEKELVARVQLRCERKAKNVLAFFGALLDARGGPPPEATTSSVR 120
Db 61 GSQPPADLSFHQVSSSLKELVARVQRLCERNERNVLAFFGALLDARGGPPPEATTSSVR 120
Qy 121 SYLPTNTVDALRGSGAWGLLRRVGDVLLHLLARCALFVLVAPSCAYQVCGPPYQLGA 180
Db 121 SYLPTNTVETLRVSGAWMLLSRVGDDLLVLLAHCALVLLVPPSCAYQVCGSPLYQICA 180
Qy 181 ATQARPPPHAS-GPERRLG-----CERAWNHSVREAGVPLGPAFARRRGSSARS 231
Db 181 TTDIWPVSVASRPTRPVGRNFTNRLFLQIKSSSRQEPKPLALPSRGTKRHLSTSTS 240
Qy 232 LPLPKRPRRGAPEPRTFVGQSWAHGPRTRGSDRGFCVVSAPAR-----PABEATSL 286
Db 241 VPSAKKARCYPVPRVEGPHRQVLPFTPSGKSWP-----SPARSPEVPTAEKDLASK 292
Qy 287 GALSCTRHSHPVSGRQHAGPPSTSRPPRWDTPCPVYAEKHFYSSGD-KEQLRPSF 345
Db 293 GKVSLSLS-GSVCKHKPSTSLSPRONAFQLRP-FIETRHFLYSGDQGERLNSF 350
Qy 346 LLSLRLPSLTGARRLVETIFLGSRPWMPGTPRRLPRLPQRYQWRMPLFLELLGNHAQCPY 405
Db 351 LLSLQPLNTGARRLVETIFLGSRPWMPGTPRRLPRLPQRYQWRMPLFLELLGNHAQCPY 410
Qy 406 GVLLKTHCPLEAA---VTPAAGVCAREKPGQSVAAPEEDTDPRLLVQLLRQHSPPQVY 462
Db 411 VLLRSHCRFTANQVTDAL-----NTSPHMLDLLRLHSSPWQVY 452
Qy 463 GFVRACLRLVPPGLWGSRRNRRFLNKKFISLGKHAKLSLOELTWKMSVRDCAWLR 522
Db 453 GFLRACLCKVVSASLWGTNRNRRFFKNLKKFISLGKYGKLSLOELMKWKMVEDCHWLS 512
Qy 523 SPGVGCVPAAEHRLREILAKFLHLMMSVYVVELLSFFVYTTTFQKNRLFYRKSVMS 582
Db 513 SPGKDRVPAAEHRLRERILATFLWMDTVVQLLSFFYITESTFQKNRLFYRKSVMS 572
Qy 583 KLOSIGIRHLKRVQLRELSAEVROHREARPAALLTSRLRFIPKPDGLRPIVMDYVGA 642

Db 573 KLOSIGVROHLERVLRLSLSQEEVRHQDTWLAMPICRLRFPKPNGLRPIVNNYSMG 632
Qy 643 RTFPRKRAERLTSRVKALFSVLYERARRPGLLGASVLGLDDIHRARWTFVLRVRAQDP 702
Db 633 RALGRRKQAHFTORLKTLSFMLNYETKPHLMGSSVLGNDDIYRTWRAFLVLRALDQ 692
Qy 703 PPELYFVKVDVTGAYDITPDRLTTEVIAIHK-PONTYCVRRYAVVQQAAGHVRKAFKS 761
Db 693 TPRMYFVKADVTGAYDAIPQKLEVVANMIRHSESTYCIQAVAVRRDQGOVHKFSRR 752
Qy 762 HVSTLTDLQPMRQFVAHLQET--SPLRDVAVIEOSSSLNEASSGLFDVFLRFCHHAVR 819
Db 753 QVITLSDLQPMGQFLKHLQSDASALRNSVIEQSIEMNESSSLPFDLFLHRSVVK 812
Qy 820 IRGKSYVQCQIGIPGGSITSLTLLCSLCYGDMEKLFAGIRRDGLLLRLVDDPFLAVTPLTH 879
Db 813 IGRCYTCQCGIPGGSLSLTLCSLCYGDMEKLFAGVQRDGLLLRVDVFLVTPHLDQ 872
Qy 880 AKTFRLTLVRGPEYGCYNLRTVNVNPPVEDEALGCTAFVQMPAHGLFPWCGLLDTRT 939
Db 873 AKTFSLTVHGVPEYGCWNLQKTVNVNPPVEPTLGGAAAPQLPAHCLFPWCGLLDTQT 932
Qy 940 LEVQSDYSSTARSIRASLTFRNGFKAGRWRRKLFGLVLRKCHSLFLDLQVNSLQVCT 999
Db 933 LEVFCDSYSGAOTSISKTSFTQSFVKAGKTRNKLLSVLRKCHGLFLDLQVNSLQVCI 992
Qy 1000 NIYKILLQAVRPHACVQLQPFHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAK 1059
Db 993 NIYKIFLLQAVRPHACVQLQPFHQVWKNPTFFLRVISTASLCYSILKAKNAGMSLGAK 1052
Qy 1060 GAAGPLPSEAVOMLCHOAFLLKLTFRHRTVYVPLGSLRTAQTLQSRKLPGLTTLTALEAAA 1119
Db 1053 GS---PPPEAAHMLCYQAFLLKLAHSHVYKCLLGLPLRTAQKLLCRKLPEATWTLKAAA 1109
Qy 1120 NPALPSPFKILD 1132
Db 1110 DPALSTDFTQILD 1122
RESULT 57
AA00636
ID AA00636 standard; protein; 617 AA.
XX
AC AA00636;
XX
XX
DT 26-JUL-1999 (first entry)
XX
DE N-terminal truncated telomerase protein sequence.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilms tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN W09901560-A1.
XX
PD 14-JAN-1999.
XX
XX 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
PA (CAMP-) CAMBIA BIOSYSTEMS LLC.
XX
PI Kilian A, Bowtell D;

XX
DR WPI; 1999-106060/09.
DR N-PSDB; AAX18264.
XX
PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
PS Claim 4; Fig 11b-c; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The C-terminus of
CC this sequence can be replaced by the sequence shown in AAY00653
XX
SQ Sequence 617 AA;
Query Match 54.3%; Score 3238; DB 2; Length 617;
Best Local Similarity 93.8%; Pred. No. 2.9e-263;
Matches 610; Conservative 0; Mismatches 0; Indels 40; Gaps 1;
Qy 1 MPRAPCRVRSLSRSHYREVLPATFVRRLGQGMRLVQGRPAAPRALVAOCLVCVPW 60
Db 1 MPRAPCRVRSLSRSHYREVLPATFVRRLGQGMRLVQGRPAAPRALVAOCLVCVPW 60
Qy 61 DARPPAPAFSPROVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
Db 61 DARPPAPAFSPROVSCLELVARVQLRCERGAKNVLAFGFALLDARGGPPFAFTTSVR 120
Qy 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Db 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVOLGA 180
Qy 181 ATOARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAGCARRRGGSASLSLPKPRR 240
Db 181 ATOARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAGCARRRGGSASLSLPKPRR 240
Qy 241 GAAPEPERTPVGQSWAHFPGTRGSDRGFCVVSPPARPAEATSLGALSSTGRSHPSVG 300
Db 241 GAAPEPERTPVGQSWAHFPGTRGSDRGFCVVSPPARPAEATSLGALSSTGRSHPSVG 300
Qy 301 RQHAGPPSTSPRPWDTPCPVYAEKHFYSSGDKSQLRPSFLLSLRPSLTGARRL 360
Db 301 RQHAGPPSTSPRPWDTPCPVYAEKHFYSSGDKSQLRPSFLLSLRPSLTGARRL 360
Qy 361 VETIFLGSPPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAOCYPYGLLTKHCPLEAAVT 420
Db 361 VETIFLGSPPMPGTPRRLPRLPQRYWQMRPLFLELLGNHAOCYPYGLLTKHCPLEAAVT 420
Qy 421 PAAGVCAREKPGQSWAAPPEEEDTPRRLVQLLRQHSPPWQVYGFVRACLRLRVPGLWGS 480
Db 421 PAAGVCAREKPGQSWAAPPEEEDTPRRLVQLLRQHSPPWQVYGFVRACLRLRVPGLWGS 480
Qy 481 RHNERFLNNTKPKFISLGHAKLSLOELTWKMSVRDCAWLRSPGVCGVCPAAEHLRREEI 540
Db 481 RHNERFLNNTKPKFISLGHAKLSLOELTWKMSVRDCAWLRSPGVCGVCPAAEHLRREEI 540
Qy 541 LAKFLHMLSVVYVVELLRSEFFVYTTFTFQKNRLLFFYRKSVWSKLQSIGITROHLKVLRE 600
Db 541 LAKFLHMLSVVYVVELLRSEFFVYTTFTFQKNRLLFFYRKSVWSKLQSIGITROHLKVLRE 600
Qy 601 LSEAEVRQHREARPAALLTSRLRFPKPDGLRPIVNNMDYVVGARTFRREKR 650

```
Db 561 LSAEVRQHRARPALLTSRLRFKPDGLRPVNMVYVVGARTFRREKR 610
|||||
RESULT 58
AA00635
ID AAY00635 standard; protein; 588 AA.
XX
AC AAY00635;
XX
DT 26-JUL-1999 (first entry)
XX
DE N-terminal truncated telomerase protein sequence.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
FN WO9901560-A1.
XX
PD 14-JAN-1999.
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
PA (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX
PI Kilian A, Bowtell D;
XX
DR WPI; 1999-106060/09.
DR N-PSDB; AAX18263.
XX
New isolated vertebrate telomerase genes - used to develop products for
treating cancers or for organ regeneration, nerve cell or brain cell
growth following injury or bone marrow transplantation.
XX
PS Claim 4; Fig 11a; 134pp; English.
XX
This sequence is a truncated human telomerase of the invention. Primers
that amplify the telomerase coding sequence can be used in a method for
diagnosing cancer in a patient. The telomerase can be used for detection,
diagnosis and drug screening. Inhibitors of telomerase activity can be
used to treat cancers such as melanomas, other skin cancers,
neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
growths. Enhancers of telomerase may be used to stimulate stem cell
proliferation and differentiation (expansion of haematopoietic stem cells
could be administered in the bone marrow transplant context). As well,
many tissues have stem cells. Proliferation of these cells may be useful
in wound healing, hair growth, treatment of disease such as Wilm's
tumour, organ regeneration or differentiation after injury or diseases,
nerve cell or brain cell growth following injury
XX
SQ Sequence 588 AA;
Query Match 53.0%; Score 3160; DB 2; Length 588;
Best Local Similarity 100.0%; Pred. No. 9.9e-257;
Matches 588; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MPRAPRCRAVRSILRSHYREVLPATFVRRLLGQWRLVQRGDPAAFRALVAQCILVCPW 60
Db 1 MPRAPRCRAVRSILRSHYREVLPATFVRRLLGQWRLVQRGDPAAFRALVAQCILVCPW 60
QY 61 DARPPPAAPFRQVSCLEKELVARLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
```

```
Db 61 DARPPPAAPFRQVSCLEKELVARLQRLCERGAKNVLAFGFALLDARGGPPPEAFTTSVR 120
|||||
QY 121 SYLNTVTDALRGSGAWGLLRRVGGDDVLVHLARCALFVLVAPSCAYQVCCPPYQLGA 180
|||||
Db 121 SYLNTVTDALRGSGAWGLLRRVGGDDVLVHLARCALFVLVAPSCAYQVCCPPYQLGA 180
|||||
QY 181 ATQARPPPHASGPRRRRLGCERAWNHSVREAGVPLGLPAPGARRRGGASRSRSLPKRPRR 240
|||||
Db 181 ATQARPPPHASGPRRRRLGCERAWNHSVREAGVPLGLPAPGARRRGGASRSRSLPKRPRR 240
|||||
QY 241 GAAPPERTPVGQSWAHPGRTRGSPDRGFCVVSAPAEAEATSLGALSCTRHSHPVG 300
|||||
Db 241 GAAPPERTPVGQSWAHPGRTRGSPDRGFCVVSAPAEAEATSLGALSCTRHSHPVG 300
|||||
QY 301 RQHAGPSTSRPPRPMDTPCPVVAETKHFYSSGDKQELRPSFLLSSLRPSLTGARRL 360
|||||
Db 301 RQHAGPSTSRPPRPMDTPCPVVAETKHFYSSGDKQELRPSFLLSSLRPSLTGARRL 360
|||||
QY 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPLRAAVT 420
|||||
Db 361 VETIFLGSRPWMPGTTPRRLPRLPQRYWQMRPLFLELLGNHQAQCPYGVLLKTHCPLRAAVT 420
|||||
QY 421 PAAGVCAREKPOGSVAAPEEEDTDPRRLVQLLRQHSVPQVYGFVRACLRRLVPPGLWGS 480
|||||
Db 421 PAAGVCAREKPOGSVAAPEEEDTDPRRLVQLLRQHSVPQVYGFVRACLRRLVPPGLWGS 480
|||||
QY 481 RHNERFLRNTKFTISLGHAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREEI 540
|||||
Db 481 RHNERFLRNTKFTISLGHAKLSLOELTWKMSVRDCAWLRSPGVGCVPAAEHRLREEI 540
|||||
QY 541 LAKFLHLMWSVYVVELLSFFVTETTFQKNRLFYRKSVMWSKLQSIG 588
|||||
Db 541 LAKFLHLMWSVYVVELLSFFVTETTFQKNRLFYRKSVMWSKLQSIG 588
|||||
RESULT 59
AA00644
ID AAY00644 standard; protein; 588 AA.
XX
AC AAY00644;
XX
DT 26-JUL-1999 (first entry)
XX
DE N-terminal truncated telomerase (ver. 2) protein sequence.
XX
KW Telomerase; human; cancer; diagnosis; melanoma; skin cancer; leukaemia;
KW neuroblastoma; breast carcinoma; colon carcinoma; lymphoma; osteosarcoma;
KW smooth muscle cell hyperplasia; stem cell proliferation; Wilm's tumour;
KW stem cell differentiation; organ regeneration; organ differentiation.
XX
OS Homo sapiens.
OS Synthetic.
XX
FN WO9901560-A1.
XX
PD 14-JAN-1999.
XX
PF 01-JUL-1998; 98WO-US013835.
XX
PR 01-JUL-1997; 97US-0051410P.
PR 21-JUL-1997; 97US-0053018P.
PR 21-JUL-1997; 97US-0053329P.
PR 04-AUG-1997; 97US-0054642P.
PR 09-SEP-1997; 97US-0058287P.
XX
PA (CAMB-) CAMBIA BIOSYSTEMS LLC.
XX
PI Kilian A, Bowtell D;
XX
DR WPI; 1999-106060/09.
DR N-PSDB; AAX18272.
XX
```

PT New isolated vertebrate telomerase genes - used to develop products for
PT treating cancers or for organ regeneration, nerve cell or brain cell
PT growth following injury or bone marrow transplantation.
XX
PS Claim 4; Fig 11c-u; 134pp; English.
XX
CC This sequence is a truncated human telomerase of the invention. Primers
CC that amplify the telomerase coding sequence can be used in a method for
CC diagnosing cancer in a patient. The telomerase can be used for detection,
CC diagnosis and drug screening. Inhibitors of telomerase activity can be
CC used to treat cancers such as melanomas, other skin cancers,
CC neuroblastomas, breast carcinomas, colon carcinomas, leukaemias,
CC lymphomas, osteosarcomas or smooth muscle cell hyperplasias or skin
CC growths. Enhancers of telomerase may be used to stimulate stem cell
CC proliferation and differentiation (expansion of haematopoietic stem cells
CC could be administered in the bone marrow transplant context). As well,
CC many tissues have stem cells. Proliferation of these cells may be useful
CC in wound healing, hair growth, treatment of disease such as Wilm's
CC tumour, organ regeneration or differentiation after injury or diseases,
CC nerve cell or brain cell growth following injury. Note: The N-terminus of
CC this sequence can be replaced by the sequences shown in AAY00656-Y00658
XX
SQ Sequence 588 AA;

Query Match 52.7%; Score 3144; DB 2; Length 588;
Best Local Similarity 99.7%; Pred. No. 2.2e-255;
Matches 586; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 1 MPRAPRCRAVRSLLRSHVREVLPLATFVRLGQWFLVQDGPAAFRALVAOCLVCVPV 60
DB 1 MPRAPRCRAVRSLLRSHVREVLPLATFVRLGQWFLVQDGPAAFRALVAOCLVCVPV 60
QY 61 DARPAPPAAPSPROVSCLEKELVARVLQRLCERGAKNVLAFAFALLDARGGPPPAFTTSVR 120
DB 61 DARPAPPAAPSPROVSCLEKELVARVLQRLCERGAKNVLAFAFALLDARGGPPPAFTTSVR 120
QY 121 SYLPNTVTDALRSGGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
DB 121 SYLPNTVTDALRSGGAWGLLRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLYQLGA 180
QY 181 ATOARPPHAGRRRLGCRAMNHSVREAGVPLGLPARGARRGGSASRLPLPKPRR 240
DB 181 ATOARPPHAGRRRLGCRAMNHSVREAGVPLGLPARGARRGGSASRLPLPKPRR 240
QY 241 GAAPPEPTPVQGSWAHPGTRGSDRGFCVSPARPAEATSLEGALSGTRHSHPSVG 300
DB 241 GAAPPEPTPVQGSWAHPGTRGSDRGFCVSPARPAEATSLEGALSGTRHSHPSVG 300
QY 301 RQHAGPPSTSRPPRWDTPCPPVYAEKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
DB 301 RQHAGPPSTSRPPRWDTPCPPVYAEKHFYSSGDKQLRPSFLLSSLRPSLTGARRL 360
QY 361 VETIFLGSRRWPGTPRRLRLPQRYQWMPLELLGNHAQCPYGVLLKTHCPRAAVT 420
DB 361 VETIFLGSRRWPGTPRRLRLPQRYQWMPLELLGNHAQCPYGVLLKTHCPRAAVT 420
QY 421 PAAGVCAREKPGQSVAAPEEDTDPRLLVOLLRHSSPWOVYGFVRACTRLRVPGLWGS 480
DB 421 PAAGVCAREKPGQSVAAPEEDTDPRLLVOLLRHSSPWOVYGFVRACTRLRVPGLWGS 480
QY 481 RHNERRFLNTKXFLISGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAABHRLREI 540
DB 481 RHNERRFLNTKXFLISGKHAKLSLOELTWKMSVRDCAWLRRSPGVGCVPAABHRLREI 540
QY 541 LAKFLHLWMSVYVVELLSRFPYVTTFTFQKNRLFYFRKSVWSKLQSIG 588
DB 541 LAKFLHLWMSVYVVELLSRFPYVTTFTFQKNRLFYFRKSVWSKLQSIG 588

RESULT 60
AAY25463
ID AAY25463 standard; protein; 622 AA.
XX

AC AAY25463;
XX
DT 22-SEP-1999 (first entry)
XX
DE Human CRT-1 protein #3.
XX
KW CRT-1; reverse transcriptase; telomerase; inhibitor; detection;
KW telomerase activity; cancer cell; screening; human.
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Protein 1..622
FT /label= CRT-1
FT /note= "Partial sequence, no stop codon given"
XX
PN WO9935261-A1.
XX
PD 15-JUL-1999.
XX
PF 08-JAN-1999; 99WO-JP000039.
XX
PR 08-JAN-1998; 98JP-00013232.
PR 30-JAN-1998; 98JP-00033584.
PR 06-MAY-1998; 98JP-00139177.
XX
PA (CHUS) CHUGAI SEIYAKU KK.
XX
PI Tsuchiya M, Yoshida K;
XX
DR WPI; 1999-430393/36.
DR N-PSDB; AAX88251.
XX
PT Novel gene, useful in detection of telomerase activity and cancer cells
PT as well as screening telomerase inhibitors for treatment of cancers.
XX
PS Example 1; Page 37-39; 44pp; Japanese.
XX
CC This invention describes novel human CRT-1 genes and their encoded
CC proteins containing a reverse transcriptase motif, which act as
CC telomerase inhibitors. The gene, its encoded protein and derived
CC antibodies can be used to provide base sequence information, detect
CC telomerase activity and cancer cells, and to screen telomerase
CC inhibitors. The detection method is simple and effective
XX
SQ Sequence 622 AA;
Query Match 52.6%; Score 3134; DB 2; Length 622;
Best Local Similarity 97.9%; Pred. No. 1.7e-254;
Matches 610; Conservative 3; Mismatches 6; Indels 4; Gaps 1;
QY 510 WKMSVRDCAWLRRSPGVGCVPAABHRLREILAKFLHLWMSVYVVELLSRFPYVTTFTFQ 569
DB 4 WRLTRRAVILAR---VGCVPAAABHRLREILAKFLHLWMSVYVVELLSRFPYVTTFTFQ 59
QY 570 KNLFFYFRKSVWSKLQSIGIRQHLKRVQLRELSEAEVROHREARPAALLTSRLRFPKPDG 629
DB 60 KNLFFYFRKSVWSKLQSIGIRQHLKRVQLRELSEAEVROHREARPAALLTSRLRFPKPDG 119
QY 630 LRPIVNMDDYVVGARTFRREKRAERLTSRVKALPSVLNYERARRPGLLGASVLGLDDTHRA 689
DB 120 LRPIVNMDDYVVGARTFRREKRAERLTSRVKALPSVLNYERARRPGLLGASVLGLDDTHRA 179
QY 690 WRPFVLRVAQDPPPELYFVKVDVTGAYDTIPQDLTEVIASIIKQNTYCVRRYAVVQK 749
DB 180 WRPFVLRVAQDPPPELYFVKVDVTGAYDTIPQDLTEVIASIIKQNTYCVRRYAVVQK 239
QY 750 AAGHVKRKAFAKSHVSTLTDLQPYMROFVAHQSTPLRDVAWIEQSSSLEASSGLDFVF 809
DB 240 AAGHVKRKAFAKSHVSTLTDLQPYMROFVAHQSTPLRDVAWIEQSSSLEASSGLDFVF 299
QY 810 LRFMCHHAVRIGKSVYVQCGIPQGSILSTLLCSLCYGDGMENKLFAGIRDDGLLLRLVDD 869

Db 300 LRFWCHHAVRIRGKSYVQCQGIPOGSIILSTLCLSCYGD MENKLFAGIRRDGLLLRLVDD 359

Qy 870 FLLVTPHLTHAKTEFLTLVRGVPYGCVMNLRKTVVNFVPEDEALGCTAFVQMPAHGLFP 929

Db 360 FLLVTPHLTHAKTEFLTLVRGVPYGCVMNLRKTVVNFVPEDEALGCTAFVQMPAHGLFP 419

Qy 930 WCGLLDTRTLLEVQSDYSSYARTSIRASLTFRNFGFKAGRNMRKLFGLRLKCHSLFLDL 989

Db 420 WCGLLDTRTLLEVQSDYSSYARTSIRASLTFRNFGFKAGRNMRKLFGLRLKCHSLFLDL 479

Qy 990 QVNSLQTVCTNIYKILLQAYRFHACVQLPFPHQVWKNTFFLRVISTASLCYSILKA 1049

Db 480 QVNSLQTVCTNIYKILLQAYRFHACVQLPFPHQVWKNTFFLRVISTASLCYSILKA 539

Qy 1050 KNAGMSLGAKGAAGPLSEAVQWMLCHQAFLLKLTFRHRTVTVPLLGSLRTAQTOLSRKLP 1109

Db 540 KNAGMSLGAKGAAGPLSEAVQWMLCHQAFLLKLTFRHRTVTVPLLGSLRTAQTOLSRKLP 599

Qy 1110 TTLTALEAANPALPSDFKTILD 1132

Db 600 TTLTALEAANPALPSDFKTILD 622

RESULT 61

AAW97384

ID AAW97384 standard; protein; 591 AA.

AC AAW97384;

DT 14-MAY-1999 (first entry)

XX A catalytic telomerase protein.

DE Catalytic telomerase; diagnosis; disease; telomerase activity.

XX Homo sapiens.

OS JP11046768-A.

PN 23-FEB-1999.

PD 01-AUG-1997; 97JP-00207708.

PF 01-AUG-1997; 97JP-00207708.

PR (MITU) MITSUBISHI CHEM CORP.

PA WPI; 1999-208111/18.

DR N-PSDB; AAX15923.

XX New catalytic protein of telomerase of a higher animal and a gene coding it - useful for diagnosis of diseases caused by the change in activity of a telomerase.

PT Claim 1; Page 11-14; 18pp; Japanese.

PS The present sequence represents a catalytic telomerase protein. The products are useful in drug compositions for the diagnosis of diseases caused by the change in activity of telomerase

CC

CC

CC

XX Sequence 591 AA;

SQ

Query Match

Best Local Similarity 51.1%; Score 3047; DB 2; Length 591;

Matches 591; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 542 AKFHLWMSVYVVELLSRFFYTETTFQKNRLFVRKSVWSKLSQIGIRQHILKRVQLREL 601

Db 1 AKFHLWMSVYVVELLSRFFYTETTFQKNRLFVRKSVWSKLSQIGIRQHILKRVQLREL 60

Qy 602 SEAEVQHQREARPAALLTSRLRFPKPDGLRPVNMVDYVVGARTFRREKAEELTSRVKAL 661

Db 61 SEAEVQHQREARPAALLTSRLRFPKPDGLRPVNMVDYVVGARTFRREKAEELTSRVKAL 120

Qy 662 FSVLVYERARRRGLIGASVLGLDDIHRAWRTFVLVRQAODPPPELYFVKVDVTGAYDTTP 721

Db 121 FSVLVYERARRRGLIGASVLGLDDIHRAWRTFVLVRQAODPPPELYFVKVDVTGAYDTTP 180

Qy 722 QDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHLQ 781

Db 181 QDRLTEVIASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTLDLPYMRQFVAHLQ 240

Qy 782 ETSPLRDVAVIQQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQGIPOGSIILSTLL 841

Db 241 ETSPLRDVAVIQQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQGIPOGSIILSTLL 300

Qy 842 CSLCYGDMENKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTEFLTLVRGVPYGCVMNLR 901

Db 301 CSLCYGDMENKLFAGIRRDGLLLRLVDDFLLVTPHLTHAKTEFLTLVRGVPYGCVMNLR 360

Qy 902 KTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLDTRTLLEVQSDYSSYARTSIRASLTEN 961

Db 361 KTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLDTRTLLEVQSDYSSYARTSIRASLTEN 420

Qy 962 RGFKAGRNMRKLFGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLPFP 1021

Db 421 RGFKAGRNMRKLFGLRLKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLPFP 480

Qy 1022 HQVWKNTFFLRVISTASLCYSILKAKNAGMSLGAKGAAGPLSEAVQWMLCHQAFLLK 1081

Db 481 HQVWKNTFFLRVISTASLCYSILKAKNAGMSLGAKGAAGPLSEAVQWMLCHQAFLLK 540

Qy 1082 LTRHRTVTVPLLGSLRTAQTOLSRKLPCTTLTALEAANPALPSDFKTILD 1132

Db 541 LTRHRTVTVPLLGSLRTAQTOLSRKLPCTTLTALEAANPALPSDFKTILD 591

RESULT 62

AAO29840

ID AAO29840 standard; protein; 500 AA.

AC AAO29840;

XX 27-AUG-2003 (first entry)

DT Human telomerase reverse transcriptase (hTERT).

DE Human; telomerase reverse transcriptase; MHC; tumour-associated antigen; hyperproliferative disease; major histocompatibility complex; hTERT; TAA; immune-mediated disease; systemic lupus erythematosus; protein therapy; Grave's disease; multiple sclerosis; atherosclerosis; cancer; diabetes; Crohn's disease; gene therapy; arthritis; enzyme; vaccine; vasculitis; cell therapy.

XX Homo sapiens.

OS WO2003038047-A2.

PN 08-MAY-2003.

PD 29-OCT-2002; 2002WO-US034588.

PF 29-OCT-2001; 2001US-0345012P.

PR (BAYU) BAYLOR COLLEGE MEDICINE.

PA Chen S, ZhaoYang Y, Schroers R;

PI WPI; 2003-430511/40.

DR New human telomerase reverse transcriptase tumor-associated MHC-I or MHC-II restricted polynucleotides and antigens, useful for treating cancers (e.g. lung or bone cancer or lymphomas), Crohn's disease or multiple sclerosis.

PT

PT

XX Example 9; Fig 2C; 143pp; English.

XX The invention relates to human telomerase reverse transcriptase (hTERT)
CC major histocompatibility complex (MHC)-I and MHC-II restricted tumour-
CC associated antigens (TAA) and polynucleotides encoding such proteins. The
CC invention is useful for treating hyperproliferative diseases such as
CC cancer (e.g. lung cancer, head and neck cancer, pancreatic cancer, breast
CC cancer, prostate cancer, renal cancer, bone cancer, testicular cancer,
CC cervical cancer, gastrointestinal cancer, lymphomas, colon cancer, pre-
CC neoplastic lesions in the lung, melanoma or bladder cancer) or immune-
CC mediated diseases which include arthritis, Crohn's disease, vasculitis,
CC Grave's disease, multiple sclerosis, atherosclerosis, diabetes, systemic
CC lupus erythematosus etc. The invention is used in gene therapy, protein
CC therapy, cell therapy and also in the preparation of vaccines. The
CC present sequence is hTERT protein

XX SQ Sequence 500 AA;
Query Match 43.4%; Score 2590; DB 6; Length 500;
Best Local Similarity 100.0%; Pred. No. 7.8e-209;
Matches 500; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 533 EHRLEBILAKFLHLSVYVVELLRGFFVYVTTTFOKNRLFVFKSVWKLQSIGIRQH 592
DB 1 EHRLEBILAKFLHLSVYVVELLRGFFVYVTTTFOKNRLFVFKSVWKLQSIGIRQH 60
QY 593 LKRVQLRELSEAEVRQHREARPAALLTSRLRPIPKDGLRPIVNMDDYVVGARTFRREKRAE 652
DB 61 LKRVQLRELSEAEVRQHREARPAALLTSRLRPIPKDGLRPIVNMDDYVVGARTFRREKRAE 120
QY 653 RLTSRVKALFVNLVYERARRPGLLGASVLGLDDIHRARWTFVLVRAQDPPPELYFKVD 712
DB 121 RLTSRVKALFVNLVYERARRPGLLGASVLGLDDIHRARWTFVLVRAQDPPPELYFKVD 180
QY 713 VTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAHGHVKAFKSHVSTLTDLPY 772
DB 181 VTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAHGHVKAFKSHVSTLTDLPY 240
QY 773 MRQFVAHQETSPLRDAVIEQSSSLNEASSGLDFVFLRFMCHHAVIRGKSVYQCQIP 832
DB 241 MRQFVAHQETSPLRDAVIEQSSSLNEASSGLDFVFLRFMCHHAVIRGKSVYQCQIP 300
QY 833 QGSITLTLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLVRGVP 892
DB 301 QGSITLTLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLRLVRGVP 360
QY 893 EYGCNVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLDTRTLEQSDYSSYART 952
DB 361 EYGCNVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCGLLDTRTLEQSDYSSYART 420
QY 953 SIRASLTFRNGFKAGRNMRKLFGLVRLKCHSLFGLDLQVNSLQTVCTNIYKILLQAYRF 1012
DB 421 SIRASLTFRNGFKAGRNMRKLFGLVRLKCHSLFGLDLQVNSLQTVCTNIYKILLQAYRF 480
QY 1013 HACVLQLPFFHQQVWKNPTFF 1032
DB 481 HACVLQLPFFHQQVWKNPTFF 500

RESULT 63
ABB99678
ID ABB99678 standard; protein; 499 AA.
XX AC ABB99678;
XX AC ABB99678;
DT 28-MAR-2003 (first entry)
XX Amino acid sequence of human telomerase reverse transcriptase fragment.
XX DE Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
XX KW cancer.
XX OS Homo sapiens.
XX DB

PN WO200294312-A1.
XX 28-NOV-2002.
XX 16-MAY-2002; 2002WO-NO000176.
XX 21-MAY-2001; 2001GB-00012342.
XX (GEMV-) GEMVAX AS.
PI Eriksen JA, Gaudernack G, Moller M, Saeboe-Larsen S;
XX WPI; 2003-129380/12.
XX New polypeptides derived from human telomerase reverse transcriptase,
PT useful in preparing a medicament for treating or preventing cancer, or in
PT preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
PT prostate cancer.
XX Disclosure; Fig 2; 56pp; English.
CC The present sequence represents a fragment of human telomerase reverse
CC transcriptase (hTERT). The specification describes peptides derived from
CC hTERT, which are capable of inducing a T cell response and are used in
CC medicine. The hTERT peptides and nucleic acids encoding them are useful
CC in preparing a medicament, which is a vaccine, an antisense molecule, or
CC is capable of generating an antisense molecule in vivo, for treating
CC cancer, or in preparing a diagnostic for diagnosing cancer. The cancer
CC is, for example, breast cancer, prostate cancer, pancreatic cancer, colo-
CC rectal cancer, lung cancer, malignant melanoma, leukemia, lymphoma,
CC ovarian cancer, cervical cancer, or a biliary tract carcinoma

XX SQ Sequence 499 AA;
Query Match 43.2%; Score 2576; DB 6; Length 499;
Best Local Similarity 100.0%; Pred. No. 1.2e-207;
Matches 499; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 634 VNMDYVVGARTFRREKRAELTSRVKALFVNLVYERARRPGLLGASVLGLDDIHRARWTF 693
DB 1 VNMDYVVGARTFRREKRAELTSRVKALFVNLVYERARRPGLLGASVLGLDDIHRARWTF 60
QY 694 VLVRAQDPPPELYFKVDVTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAHGH 753
DB 61 VLVRAQDPPPELYFKVDVTGAYDTIPDRLTEVIASIIKPQNTYCVRRYAVVQKAHGH 120
QY 754 HVRKAFKSHVSTLTDLPYMRQFVAHQETSPLRDAVIEQSSSLNEASSGLDFVFLRFM 813
DB 121 HVRKAFKSHVSTLTDLPYMRQFVAHQETSPLRDAVIEQSSSLNEASSGLDFVFLRFM 180
QY 814 CHHAVIRGKSVYQCQIPQGSITLTLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLV 873
DB 181 CHHAVIRGKSVYQCQIPQGSITLTLCSLCYGDNMENKLFAGIRRDGLLLRLVDDFLV 240
QY 874 TPHLTHAKTFLRLVRGVPYEGCVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCG 933
DB 241 TPHLTHAKTFLRLVRGVPYEGCVNLRKTVVNFVPEDEALGCTAFVQMPAHGLFPWCG 300
QY 934 LLDTRTLEQSDYSSYARTSIRASLTFRNGFKAGRNMRKLFGLVRLKCHSLFGLDLQVNS 993
DB 301 LLDTRTLEQSDYSSYARTSIRASLTFRNGFKAGRNMRKLFGLVRLKCHSLFGLDLQVNS 360
QY 994 LQTVCTNIYKILLQAYRFHACVLQLPFFHQQVWKNPTFFLRVSDTASLCYSLKAKNAG 1053
DB 361 LQTVCTNIYKILLQAYRFHACVLQLPFFHQQVWKNPTFFLRVSDTASLCYSLKAKNAG 420
QY 1054 MSLGAKGAAGPLPSEAVQWLCHQAFLLKLTTRHRVTVVPLIGSLRTAQTLRSKLPCTT 1113
DB 421 MSLGAKGAAGPLPSEAVQWLCHQAFLLKLTTRHRVTVVPLIGSLRTAQTLRSKLPCTT 480
QY 1114 ALEAANPALPSDFKTILD 1132
DB 481 ALEAANPALPSDFKTILD 499

ID	AA25462	standard; protein; 438 AA.
XX	AC	AA25462;
XX	DT	22-SEP-1999 (first entry)
XX	XX	Human CRT-1 protein #2.
XX	DE	CRT-1; reverse transcriptase; telomerase; inhibitor; detection;
KW	KW	telomerase activity; cancer cell; screening; human.
XX	OS	Homo sapiens.
XX	FH	Key
FT	Protein	1. .438
FT	FT	/label= CRT-1
FT	FT	/note= "Partial sequence, no stop codon given"
XX	PN	WO9935261-A1.
XX	PD	15-JUL-1999.
XX	PF	08-JAN-1999; 99WO-JP000039.
XX	PR	08-JAN-1998; 98JP-00013232.
XX	PR	30-JAN-1998; 98JP-00033584.
XX	PR	06-MAY-1998; 98JP-00139177.
XX	PA	(CHUS) CHUGAI SEIYAKU KK.
XX	PI	Tauchiya M, Yoshida K;
XX	DR	WPI; 1999-430393/36.
XX	DR	N-PSDB; AAX88250.
XX	PT	Novel gene, useful in detection of telomerase activity and cancer cells
XX	PT	as well as screening telomerase inhibitors for treatment of cancers.
XX	PS	Example 1; Page 35-36; 44pp; Japanese.
XX	CC	This invention describes novel human CRT-1 genes and their encoded
XX	CC	proteins containing a reverse transcriptase motif, which act as
XX	CC	telomerase inhibitors. The gene, its encoded protein and derived
XX	CC	antibodies can be used to provide base sequence information, detect
XX	CC	telomerase activity and cancer cells, and to screen telomerase
XX	CC	inhibitors. The detection method is simple and effective
XX	SQ	Sequence 438 AA;
Query Match 36.6%; Score 2184; DB 2; Length 438;		
Best Local Similarity 97.0%; Pred. No. 9.8e-175;		
Matches 425; Conservative 3; Mismatches 6; Indels 4; Gaps 1;		
Qy	510	WKMSVRDCAMLRSPGVGCPAAEHLREBEILAKFLHLMMSVYVVELLSFFVYTTTFQ 569
Db	4	WRLTRRAVILAR----VGCVPAAEHLREBEILAKFLHLMMSVYVVELLSFFVYTTTFQ 59
Qy	570	KNRLFFYRKSWKLSQIGIRQHLKRVQLRELSEAEVROHREARPALTSRLRFIPKPDG 629
Db	60	KNRLFFYRKSWKLSQIGIRQHLKRVQLRELSEAEVROHREARPALTSRLRFIPKPDG 119
Qy	630	LRPIVNMDDYVGARTFRREKRAERLTSRVKALFSVLNYERARRPGLLGASVLGLDDIHR 689
Db	120	LRPIVNMDDYVGARTFRREKRAERLTSRVKALFSVLNYERARRPGLLGASVLGLDDIHR 179
Qy	690	WRTFVLVRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAVVQK 749
Db	180	WRTFVLVRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAVVQK 239
Qy	750	AAHGHVTKAFKSHVSTLTDLPYMRQFVAHLQETSPLRDVAVVIEQSSSLNEASSGLPDDF 809
Db	240	AAHGHVTKAFKSHVSTLTDLPYMRQFVAHLQETSPLRDVAVVIEQSSSLNEASSGLPDDF 299
Qy	810	LRPMCHHAVRIKGSYVQCQIGIPQGSILSTLLCSLCYGDMEKLFAGIRRDGLLLRLVDD 869
Db	300	LRPMCHHAVRIKGSYVQCQIGIPQGSILSTLLCSLCYGDMEKLFAGIRRDGLLLRLVDD 359
Qy	870	FLIYVPHLTHAKTFLRLTVRGVPEYGCVVNLRKTVVNFVEDEALGGTAFVQMPAHGLFP 929
Db	360	FLIYVPHLTHAKTFLRLTVRGVPEYGCVVNLRKTVVNFVEDEALGGTAFVQMPAHGLFP 419
Qy	930	WCGLLLDTRTLEVSQSDYS 947
Db	420	WCGLLLDTRTLEVSQSDYS 437
RESULT 66		
ABB99680		
ID	ABB99680	standard; protein; 436 AA.
XX	AC	ABB99680;
XX	DT	28-MAR-2003 (first entry)
XX	DE	Splice variant of a human telomerase reverse transcriptase fragment.
XX	KW	Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
XX	OS	cancer.
XX	OS	Homo sapiens.
XX	PN	WO200294312-A1.
XX	PD	28-NOV-2002.
XX	PF	16-MAY-2002; 2002WO-NO000176.
XX	PR	21-MAY-2001; 2001GB-00012342.
XX	PA	(GEMV-) GEMVAX AS.
XX	PI	Eriksen JA, Gaudernack G, Moller M, Saeboe-Larssen S;
XX	DR	WPI; 2003-129380/12.
XX	PT	New polypeptides derived from human telomerase reverse transcriptase,
XX	PT	useful in preparing a medicament for treating or preventing cancer, or in
XX	PT	preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
XX	PT	prostate cancer.
XX	PS	Disclosure; Fig 2; 56pp; English.
XX	CC	The present sequence represents a splice variant of a fragment of human
XX	CC	telomerase reverse transcriptase (hTERT). The specification describes
XX	CC	peptides derived from hTERT which are capable of inducing a T cell
XX	CC	response and are used in medicine. The hTERT peptides and nucleic acids
XX	CC	encoding them are useful in preparing a medicament, which is a vaccine,
XX	CC	an antisense molecule, or is capable of generating an antisense molecule
XX	CC	in vivo, for treating cancer, or in preparing a diagnostic for diagnosing
XX	CC	cancer. The cancer is, for example, breast cancer, prostate cancer,
XX	CC	pancreatic cancer, colo-rectal cancer, lung cancer, malignant melanoma,
XX	CC	leukemia, lymphoma, ovarian cancer, cervical cancer, or a biliary tract
XX	CC	carcinoma
XX	SQ	Sequence 436 AA;
Query Match 36.6%; Score 2181; DB 6; Length 436;		
Best Local Similarity 100.0%; Pred. No. 1.8e-174;		
Matches 421; Conservative 0; Mismatches 0; Indels 0; Gaps 0;		
Qy	634	VNMDYVVGARTFRREKRAERLTSRVKALFSVLNYERARRPGLLGASVLGLDDIHRWRTF 693
Db	1	VNMDYVVGARTFRREKRAERLTSRVKALFSVLNYERARRPGLLGASVLGLDDIHRWRTF 60
Qy	694	VLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAVVQKAAHG 753

Db 61 VLVRQAQPPPELYFVKVDVTGAVDTIPQDRLTEVIAIIKPONTYCVRRYAVVQKAHG 120
QY 754 HVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPDRDAVVEQSSSINEASSGLFDVFLRFM 813
Db 121 HVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPDRDAVVEQSSSINEASSGLFDVFLRFM 180
QY 814 CHHAVRIKGSYVQCQIPQSGIISLTLCSLCYGD MENKLFAGIRRDGLLRLVDDFLV 873
Db 181 CHHAVRIKGSYVQCQIPQSGIISLTLCSLCYGD MENKLFAGIRRDGLLRLVDDFLV 240
QY 874 TPHLTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEDEALGGTAFVQMPAHGLFPWCGL 933
Db 241 TPHLTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEDEALGGTAFVQMPAHGLFPWCGL 300
QY 934 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRKLFGLVRLKCHSLFLDLQVNS 993
Db 301 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRKLFGLVRLKCHSLFLDLQVNS 360
QY 994 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNAG 1053
Db 361 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNAG 420
QY 1054 M 1054
Db 421 M 421

RESULT 67
ABB99679
ID ABB99679 standard; protein; 463 AA.
XX AC ABB99679;
XX DT 28-MAR-2003 (first entry)
XX DE Splice variant of a human telomerase reverse transcriptase fragment.
XX KW Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
XX KW cancer.
XX OS Homo sapiens.
XX PN WO200294312-A1.
XX PD 28-NOV-2002.
XX PF 16-MAY-2002; 2002WO-NO000176.
XX PR 21-MAY-2001; 2001GB-00012342.
XX PA (GEMV-) GEMVAX AS.
XX PI Eriksen JA, Gaudernack G, Moller M, Saeboe-Larsen S;
XX WPI; 2003-129380/12.
XX DR New polypeptides derived from human telomerase reverse transcriptase,
XX FT useful in preparing a medicament for treating or preventing cancer, or in
XX PT preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
XX PT prostate cancer.
XX PS Disclosure; Fig 2; 56pp; English.
XX CC The present sequence represents a splice variant of a fragment of human
XX CC telomerase reverse transcriptase (hTERT). The specification describes
XX CC peptides derived from hTERT, which are capable of inducing a T cell
XX CC response and are used in medicine. The hTERT peptides and nucleic acids
XX CC encoding them are useful in preparing a medicament, which is a vaccine,
XX CC an antisense molecule, or is capable of generating an antisense molecule
XX CC in vivo, for treating cancer, or in preparing a diagnostic for diagnosing
XX CC cancer. The cancer is, for example, breast cancer, prostate cancer,
XX CC pancreatic cancer, colo-rectal cancer, lung cancer, malignant melanoma,
XX CC leukemia, lymphoma, ovarian cancer, cervical cancer, or a biliary tract

CC carcinoma
XX XX Sequence 463 AA;
SQ
Query Match 36.4%; Score 2170; DB 6; Length 463;
Best Local Similarity 100.0%; Pred. No. 1.6e-173;
Matches 419; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 634 VNMDYVVGARTFRREKRAERLTSRVKALFVSVLNYERARRPGLLGASVLGLDDIHRARWTF 693
Db 1 VNMDYVVGARTFRREKRAERLTSRVKALFVSVLNYERARRPGLLGASVLGLDDIHRARWTF 60
QY 694 VLVRQAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIAIIKPONTYCVRRYAVVQKAHG 753
Db 61 VLVRQAQDPPPELYFVKVDVTGAYDTIPQDRLTEVIAIIKPONTYCVRRYAVVQKAHG 120
QY 754 HVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPDRDAVVEQSSSINEASSGLFDVFLRFM 813
Db 121 HVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPDRDAVVEQSSSINEASSGLFDVFLRFM 180
QY 814 CHHAVRIKGSYVQCQIPQSGIISLTLCSLCYGD MENKLFAGIRRDGLLRLVDDFLV 873
Db 181 CHHAVRIKGSYVQCQIPQSGIISLTLCSLCYGD MENKLFAGIRRDGLLRLVDDFLV 240
QY 874 TPHLTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEDEALGGTAFVQMPAHGLFPWCGL 933
Db 241 TPHLTHAKTFLRTLVRGVPEYGCVVNLKRTVNFPEDEALGGTAFVQMPAHGLFPWCGL 300
QY 934 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRKLFGLVRLKCHSLFLDLQVNS 993
Db 301 LLDTRTLEVSQSDYSYARTSIRASLTENRGFKAGNNMRKLFGLVRLKCHSLFLDLQVNS 360
QY 994 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNA 1052
Db 361 LQTVCTNIYKILLQAVRFHACVQLPFPHQQVWKNPTFFLRVISDTASLCYSILKAKNA 419

RESULT 68
AAV25461
ID AAV25461 standard; protein; 437 AA.
XX AC AAV25461;
XX DT 22-SEP-1999 (first entry)
XX DE Human CRT-1 protein #1.
XX KW CRT-1; reverse transcriptase; telomerase; inhibitor; detection;
XX KW telomerase activity; cancer cell; screening; human.
XX OS Homo sapiens.
XX FH Key Location/Qualifiers
XX FT Protein 1. 437
XX FT /label= CRT-1
XX FT /note= "Partial sequence, no stop codon given"
XX PN WO9935261-A1.
XX PD 15-JUL-1999.
XX PF 08-JAN-1999; 99WO-JP0000039.
XX PR 08-JAN-1998; 98JP-00013232.
XX PR 30-JAN-1998; 98JP-00033584.
XX PR 06-MAY-1998; 98JP-00139177.
XX PA (CHUS) CHUGAI SEIYAKU KK.
XX PI Tsuchiya M, Yoshida K;
XX WPI; 1999-430393/36.
XX DR N-PSDB; AAX88243.

XX Novel gene, useful in detection of telomerase activity and cancer cells
PT as well as screening telomerase inhibitors for treatment of cancers.
XX
XX Claim 2; Page 31-32; 44pp; Japanese.
XX
XX This invention describes novel human CRT-1 genes and their encoded
CC proteins containing a reverse transcriptase motif, which act as
CC telomerase inhibitors. The gene, its encoded protein and derived
CC antibodies can be used to provide base sequence information, detect
CC telomerase activity and cancer cells, and to screen telomerase
CC inhibitors. The detection method is simple and effective
XX
SQ Sequence 437 AA;
Query Match 36.4%; Score 2169.5; DB 2; Length 437;
Best Local Similarity 96.8%; Pred. No. 1.6e-173;
Matches 424; Conservative 3; Mismatches 6; Indels 5; Gaps 2;
QY 510 WKMSVRDCAWLRRSPGVCVPAAEHRLREELAKFLHLMVSVVVELLRSFFVYVTTTFQ 569
Db 4 WRLTRAVILAR---VGCVPAAEHRLREELAKFLHLMVSVVVELLRSFFVYVTTTFQ 59
QY 570 KNRLFFYRKSVWSKLSQIGIRQHLKRVQLRELSEAEVRQREARPAALLTSRLRFPKPDG 629
Db 60 KNRLFFYRKSVWSKLSQIGIRQHLKRVQLRELSEAEVRQREARPAALLTSRLRFPKPDG 119
QY 630 LRPIVNMVYVGARTFRREKRAERLTSRVKALFSLVLYERARRPGLLGASVLGLDDIIRA 689
Db 120 LRPIVNMVYVGARTFRREKRAERLTSRVKALFSLVLYERARRPGLLGASVLGLDDIIRA 179
QY 690 WRTFVLVRQAQDPPPELYFVKVDVTGAYDTIPQDLTEVIAASIKPQNTYCVRRYAVQK 749
Db 180 WRTFVLVRQAQDPPPELYFVKVDVTGAYDTIPQDLTEVIAASIKPQNTYCVRRYAVQK 239
QY 750 AAHGHRVAKFSHVSTLTDLPYMRQFVAHLOETSPURDAVVEQSSSLEASGLFDPVF 809
Db 240 AAHGHRVAKFSHVSTLTDLPYMRQFVAHLOETSPURDAVVEQSSSLEASGLFDPVF 299
QY 810 LRFWCHHAVRIGKSVYQCGIIPQGSTLTLCLSCYGD MENKLFAGIRSDGLLRLVDD 869
Db 300 LRFWCHHAVRIGKSVYQCGIIPQGSTLTLCLSCYGD MENKLFAGIRSDGLLRLVDD 359
QY 870 FLVTPHLTHAKTFLRLTVRGVPEYGCVNLRKTVNFPVEDEALGCTAFVQMPAHGLFP 929
Db 360 F-LVTPHLTHAKTFLRLTVRGVPEYGCVNLRKTVNFPVEDEALGCTAFVQMPAHGLFP 418
QY 930 WCGLLDTRTLEVSQSDYS 947
Db 419 WCGLLDTRTLEVSQSDYS 436
RESULT 69
ADG90607
ID ADG90607 standard; protein; 743 AA.
XX
AC ADG90607;
XX
XX 25-MAR-2004 (first entry)
DT
DE Dog TERT SEQ ID NO:10.
XX
XX dog; immune response; telomerase reverse transcriptase; TERT; cytostatic;
XX immunostimulant; cancer; cytotoxic T cell response.
XX
XX Canis familiaris.
OS
XX WO2004002408-A2.
PN
XX
PD 08-JAN-2004.
XX
XX 24-JUN-2003; 2003WO-US019844.
PF
XX
XX

PR 27-JUN-2002; 2002US-0393295P.
XX
PA (GERO-) GERON CORP.
PI Majumdar A, Ferber IA, Frolkis M, Wang Z;
XX
XX WPI; 2004-071946/07.
DR N-PSDB; ADG90606.
XX
XX Eliciting an immune response in a mammal specific for its own telomerase
PT reverse transcriptase (TERT), useful for treating or preventing cancer,
PT comprises administering a composition containing TERT of another
PT mammalian species.
XX
XX Claim 10; SEQ ID NO 10; 44pp; English.
XX
XX The invention relates to a novel method for eliciting an immune response
CC in a mammalian subject that is specific for its own telomerase reverse
CC transcriptase (TERT), comprising administering an immunogenic composition
CC containing a protein with at least 20 consecutive amino acids of TERT of
CC another mammalian species, or a nucleic acid encoding the protein. A
CC composition of the invention has cytostatic, and immunostimulant
CC activity. The protein or the nucleic acid encoding the protein is useful
CC in the manufacture of a medicament for the treatment of cancer in a human
CC or for eliciting a cytotoxic T cell response in a human.
XX
SQ Sequence 743 AA;
Query Match 36.3%; Score 2166.5; DB 8; Length 743;
Best Local Similarity 56.7%; Pred. No. 6.2e-173;
Matches 467; Conservative 63; Mismatches 151; Indels 143; Gaps 20;
QY 1 MPRAPCRVAVRSLRSHYREVLPATFVRLRQPGWRLVQRGDPAAFRALVAOCLVCVPW 60
Db 1 MPRAPCRVAVRSLRSHYREVLPATFVRLRQPGWRLVQRGDPAAFRALVAOCLVCVPW 60
QY 61 DARPPPAAPSFQVSCVCLXELVARLQRLCERGAKNVLAFAFGALLDARGGPPFAFTTSVR 120
Db 61 GARPPPAAPCFRQ-----LAFGALLDARGGPPFAFTTSVR 97
QY 121 SYLPNTVTALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 180
Db 98 SYLPNTVTALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQVCGPPLVQLGA 152
QY 181 ATOARPPPHASGPRRLGCERAWNHSVRVAGVPLGIPAGARRRGGSSASRLPLKPRPR 240
Db 153 TTSAPPPLCRSPRS-----PLPAPRSAGARLDLRTROARTPAR 193
QY 241 GAAPEPERTFVGQGSWAHFGTRGPGSDRGFCVVSAPARPAEATSLEGALSGRHSHPVG 300
Db 194 GS---PERSSGSASQWRSRRHR-PS-----QATAPVASRVYTCRALPQLA 235
QY 301 RQHAGPPSTSR-----PPRPWDTPCPPVYATKHFLYSSGDKQLRPSFLUSSLRPSL 354
Db 236 WE--GGPPDSSNHPSLDTSFGQGVPHDPAHPETKRFLYCSGGRRLRPSFLSALPPTL 293
QY 355 TGARLIVETIFLGSRPWPGTPRRLPRLPORVQWMEPLFLELLGNHAQCPYGVLLKTHCP 414
Db 294 -GARKLIVETIFLGSAPQKFGAARRMRRLPARVWRMPLFQELLGNHARCPYRALLKTHCP 352
QY 415 LRAAVTFP-----AAGVCAREKPGQSVAAPEBEDTDPRLVQLLRHSSPWVYGFV 465
Db 353 LRAAAKEGSGNOAHRGVIGICPLERP--VAAPQEQ-TDSTRVLVQLLRHSSPWVYAF 408
QY 466 RACRLRLVPPGLWGSRRHNRRLNRYKFLISLGHAKLSLQELTWNMSVDRDCAWLRRSPG 525
Db 409 RACLCWLVTGLWGSRRHNRRLNRYKFLISLGHAKLSLQELTWNMSVDRDCAWLRRSPG 468
QY 526 VGC-----VP---AAEHLREELAKFLHLMVSVVVELLRSF 560
Db 469 EECRVSRCLVGLQEGSGSQFECGRPLFPNHPSEH-----PFLCWAGS-DCPACLAP 519
QY 561 FYVTETTFQKRL-----FFYRKSVMSKLSQ-----IGIRQHL-KRVQLR 599

Db 520 RLPSTSPHPQRLPCPCPHLLPGVNRHHESSWRRPSPYPGHTWLLIGCAPQFNFWHLR 579
Qy 600 ELSAEVROHREARPAALLTSLRLEPKDGLRPVNDYVVGARTFREKRAERLTSRVK 659
Db 580 ELSAEVRRHREARPAALLTSLRLEPKDGLRPVNDYVVGARTFREKRAERLTSRVK 639
Qy 660 ALFSLVLYERARRPGLLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDT 719
Db 640 TLFSLVLYERARRPGLLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDA 699
Qy 720 IPQDRLTEVIASTIKPO-NTYCYRRYAVVQKAAHGHVRFKPKSH 762
Db 700 LPQDRLVEVIANVIRPQESTYCYRRYAVVQKAAHGHVRFKPKSH 743

RESULT 70
AAW56109
ID AAW56109 standard; protein; 564 AA.
XX AAW56109;
XX 13-AUG-1998 (first entry)
XX Human telomerase reverse transcriptase 63 kDa clone 712562 protein.
XX Human; telomerase reverse transcriptase; hTERT; TERT; diagnosis; prognosis;
XX cell proliferation; cancer; ageing; ribonucleoprotein.
XX Synthetic.
XX Homo sapiens.
XX Key Location/Qualifiers
XX Misc-difference 102 /label= encoded by ARG
XX GB23317891-A.
XX 08-APR-1998.
XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1996; 96US-00724643.
XX 18-APR-1997; 97US-00844419.
XX 25-APR-1997; 97US-00846017.
XX 06-MAY-1997; 97US-00851843.
XX 09-MAY-1997; 97US-00854050.
XX 14-AUG-1997; 97US-00911312.
XX 14-AUG-1997; 97US-00912951.
XX 14-AUG-1997; 97US-00915503.
XX (GERO-) GERON CORP.
XX (UYTE-) UNIV TECHNOLOGY CORP.
XX Cach TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
XX Andrews WH;
XX WPI; 1998-171633/16.
XX N-PSDB; AAV22426.
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
XX variants - are useful in the diagnosis, prognosis and treatment of cell
XX proliferation conditions especially cancer and ageing.
XX Example 1; Fig 68; 387pp; English.
XX The present sequence is a human telomerase reverse transcriptase (hTERT)
XX clone protein from the present invention. The present invention also
XX describes the following methods: (A) determining whether a test compound
XX is a modulator of hTERT, by detecting the change in hTERT recombinant
XX protein or polynucleotide, on administration of the compound; (B)
XX preparation of recombinant telomerase by contacting a protein preparation
XX of hTERT with a telomerase RNA component; (C) detection of the hTERT RNA or

CC protein in a sample by binding a relevant probe to the sample and
CC detecting the complex formed or in the case of RNA detection, amplifying
CC the product and correlating the presence of complex or amplification
CC product with presence of hTERT in the sample; and (D) increasing the
CC proliferation of a vertebrate cell by increasing hTERT expression; and (E)
CC the use of an agent that causes an increase in cell vertebrate cell
CC proliferation to create a medicament that inhibits ageing. A protein
CC preparation of hTERT and the polynucleotide encoding hTERT can be used in
CC the manufacture of medicaments for inhibiting the effect of ageing or
CC cancer. Inhibitors of telomerase activity can be used to treat conditions
CC that are associated with high telomerase activity. A protein preparation
CC of hTERT can also be used in the new methods
XX
XX Sequence 564 AA;

Query Match 35.0%; Score 2088; DB 2; Length 564;
Best Local Similarity 72.8%; Pred. NO. 1.7e-166;
Matches 433; Conservative 12; Mismatches 38; Indels 112; Gaps 7;
Qy 549 MSVVVVELLRSPFFVYVTTTFQKNRLFFYRKSVWSKLSQIGIRHKLKRVQLRELSAEVRQ 608
Db 1 MSVVVVELLRSPFFVYVTTTFQKNRLFFYRKSVWSKLSQIGIRHKLKRVQLRELSAEVRQ 60
Qy 609 HREARPAALLTSRLRFIPKPDGLRPVNDYVVGARTFREKRAERLTSRVKALFSLVNYE 668
Db 61 HREARPAALLTSRLRFIPKPDGLRPVNDYVVGARTFREKRAERLTSRVKALFSLVNYE 120
Qy 669 RARRPGLLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 728
Db 121 RARRPGLLGASVLGDDIHRARWTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 180
Qy 729 IASIIKPONTYCYRRYAVVQKAAHGHVRFKPKSHVSTLTDLPYMRQFVAHLQETSPLRD 788
Db 181 IASIIKPONTYCYRRYAVVQKAAHGHVRFKPKSHVSTLTDLPYMRQFVAHLQETSPLRD 210
Qy 789 AVVIEQSSSLNEASSGLFDVFLRFWCHHAVIRGKSVYQCGIIPQGSILSTLLCSLCYGD 848
Db 211 -----SRATSYVQCGIIPQGSILSTLLCSLCYGD 239
Qy 849 MENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLTRVGVPEYGCVMNLKRTVNVFP 908
Db 240 MENKLFAGIRRDGLLLRLVDDFLVTPHLTHAKTFLTRVGVPEYGCVMNLKRTVNVFP 299
Qy 909 VEDEALGGTAFVQMPAHGLFPWCGLLDTTRLEVSQSYSSVARTSIRASLTFNFGFKAGR 968
Db 300 VEDEALGGTAFVQMPAHGLFPWCGLLDTTRLEVSQSYSSVARTSIRASLTFNFGFKAGR 359
Qy 969 NMRRLKFGVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLQFPFHQQVWKN 1028
Db 360 NMRRLKFGVLRKCHSLFLDLQVNSLQTVCTNIYKILLQAYRFHACVQLQFPFHQQVWKN 419
Qy 1029 PTFPLRVISDTASLCYSIL-----KAKNAGMSLGAAGNAGP--LPSEAVQ 1071
Db 420 PHF-----SCASSLTRLPLLLHPESQERRDVAGQGRRRPSALRGRAVAVPSPAQADS 474
Qy 1072 WLCHQAFLLKTLHRVTVVPLLSGLRTAQTLQSLKPLGCTTLTALEAANPALPSD 1126
Db 475 TPCH-----LRATPGVTQDSPDAAESEA-PGD 500

RESULT 71
ADG90605
ID ADG90605 standard; protein; 575 AA.
XX ADG90605;
XX 25-MAR-2004 (first entry)
XX Rat TERT SEQ ID NO.8.
XX rat; immune response; telomerase reverse transcriptase; TERT; cytostatic;
XX immunostimulant; cancer; cytotoxic T cell response.
XX

QY 1 MPAPRCRAVRSLLRSHYREVLPLATFVRRLGQWRLVORGDPAAFRALVAQCLVCVPW 60
Db 1 MPAPRCRAVRSLLRSHREVLPLATFVRRLGQWRLVORGDPAAFRALVAQCLVCVPW 60
QY 61 DARPPPAAPSFRQVSCIKELVARLQRLCERGAKNVLAFGFALLDGCARGGPPPEAFTTSVR 120
Db 61 DARPPPAAPSFRQVSCIKELVARLQRLCERGAKNVLAFGFALLDGCARGGPPPEAFTTSVR 120
QY 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLARCALFVLNAPSCAYQVCGPPPLYQLGA 180
Db 121 SYLPTNTVDALRGSGAWGLLLRRVGGDVLVHLARCALFVLNAPSCAYQVCGPPPLYQLGA 180
QY 181 ATOARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPCARRRGGSASRSPLPKRPRR 240
Db 181 ATOARPPPHASGPRRLGGERAWNHSVRAGVPLGLPAPCARRRGGSASRSPLPKRPRR 240
QY 241 GAAPEPERPVGGSWAHPCRTGSDRGFCVVSPPARPAEEATSLGALSGTRHSHPSVG 300
Db 241 GAAPEPERPVGGSWAHPCRTGSDRGFCVVSPPARPAEEATSLGALSGTRHSHPSVG 300
QY 301 RQHAGPPSTSRPPRWDTPCPVYAEKHFYSSGDKQLRPSFLLS 348
Db 301 RQHAGPPSTSRPPRWDTPCPVYAEKHFYSSGDKQLRPSFLLS 348

RESULT 73

AAW47001

ID AAW47001 standard; protein; 538 AA.

XX AC AAW47001;

XX DT 13-AUG-1998 (first entry)

XX DE Glutathione-S-transferase and hTERT fusion protein 1.

XX KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;

XX OS cell proliferation; cancer; ageing; ribonucleoprotein.

XX OS Synthetic.

XX OS Homo sapiens.

XX FH Key Location/Qualifiers

FT Region 1..220

FT /note= "glutathione-S-transferase fragment"

FT Misc-difference 221..226

FT /note= "chrombin cleavage sequence"

FT Misc-difference 227..231

FT /note= "heart muscle protein kinase recognition sequence"

FT Misc-difference 232..236

FT /note= "residues introduced by cloning"

FT Region 237..538

FT /note= "hTERT protein fragment"

XX GB2317891-A.

XX PD 08-APR-1998.

XX PF 01-OCT-1997; 97GB-00020890.

XX PR 01-OCT-1996; 96US-00724643.

PR 18-APR-1997; 97US-00844419.

PR 25-APR-1997; 97US-00846017.

PR 06-MAY-1997; 97US-00851843.

PR 09-MAY-1997; 97US-00854050.

PR 14-AUG-1997; 97US-00911312.

PR 14-AUG-1997; 97US-00912951.

PR 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.

PA (UYTE-) UNIV TECHNOLOGY CORP.

XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;

PI Andrews WH;

XX

DR WPI; 1998-171633/16.

XX

PT Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.

XX

PS Example 6; Page 224; 387pp; English.

XX

CC The present sequence represents a fusion protein from an example of the
CC present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods

XX SQ

Sequence 538 AA;

Query Match

Best Local Similarity 25.8%; Score 1538; DB 2; Length 538;

Matches 297; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

QY

831 IPQGSILSTLLCSLCYCGDMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRG 890

Db

237 IPQGSILSTLLCSLCYCGDMENKLFAGIRRDGLLRLVDDFLVTPHLTHAKTFLRTLVRG 296

QY

891 VPEYGCVVNLKRTVNVFVEDEALGGTAFVQMPAGLFPWCGLLDDTTLTLEVSQSYSSYA 950

Db

297 VPEYGCVVNLKRTVNVFVEDEALGGTAFVQMPAGLFPWCGLLDDTTLTLEVSQSYSSYA 356

QY

951 RTSIRASLTENKRGFKAGNMRKLFGLVLRKCHSLFDLQVNSLQVCTNIIKILLQAY 1010

Db

357 RTSIRASLTENKRGFKAGNMRKLFGLVLRKCHSLFDLQVNSLQVCTNIIKILLQAY 416

QY

1011 RFHACVLQLPFHQVQWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAV 1070

Db

417 RFHACVLQLPFHQVQWKNPTFFLRVISDTASLCYSILKAKNAGMSLGAKGAGPLPSEAV 476

QY

1071 QWLCHQAFLLKLTTRHRTVYVPLGLSLRTAQQLSKLPGTTLTALAEANPALPSDFKTI 1130

Db

477 QWLCHQAFLLKLTTRHRTVYVPLGLSLRTAQQLSKLPGTTLTALAEANPALPSDFKTI 536

QY

1131 LD 1132

Db

537 LD 538

RESULT 74

AAW47004

ID AAW47004 standard; protein; 514 AA.

XX AC AAW47004;

XX DT 13-AUG-1998 (first entry)

XX DE Glutathione-S-transferase and hTERT fusion protein 4.

XX KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
PI cell proliferation; cancer; ageing; ribonucleoprotein.

XX Synthetic.
OS Homo sapiens.

XX Key Location/Qualifiers
FT Region 1..220
FT Region /note= "glutathione-S-transferase fragment"
FT Region 237..514
FT FT /note= "hTERT protein fragment"

XX GB2317891-A.
XX 08-APR-1998.

XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1996; 96US-00724643.
XX 18-APR-1997; 97US-00844419.
XX 25-APR-1997; 97US-00846017.
XX 06-MAY-1997; 97US-00851843.
XX 09-MAY-1997; 97US-00854050.
XX 14-AUG-1997; 97US-00911312.
XX 14-AUG-1997; 97US-00912951.
XX 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.
PA (UYTE-) UNIV TECHNOLOGY CORP.

XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;

XX WPI; 1998-171633/16.

XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.

XX Example 6; Page 226-227; 387pp; English.

XX The present sequence represents a fusion protein from an example of the
CC present invention which describes human telomerase reverse transcriptase
CC (hTERT). The present invention also describes the following methods: (A)
CC determining whether a test compound is a modulator of hTERT, by detecting
CC the change in hTERT recombinant protein or polynucleotide, on
CC administration of the compound; (B) preparation of recombinant telomerase
CC by contacting a protein preparation of hTERT with a telomerase RNA
CC component; (C) detection of the hTERT RNA or protein in a sample by
CC binding a relevant probe to the sample and detecting the complex formed
CC or in the case of RNA detection, amplifying the product and correlating
CC the presence of complex or amplification product with presence of hTERT in
CC the sample; and (D) increasing the proliferation of a vertebrate cell by
CC increasing hTERT expression; and (E) the use of an agent that causes an
CC increase in cell vertebrate cell proliferation to create a medicament
CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods

XX SQ Sequence 514 AA;

Query Match 25.3%; Score 1506; DB 2; Length 514;
Best Local Similarity 99.6%; Pred. No. 1.5e-117;
Matches 278; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 281 EATSEALSGTRHSHPSVGRQHAGPPSTSRPRPMDTFCPPVYATKHFLYSSGDKEQ 340
:|||||
Db 236 KATSEALSGTRHSHPSVGRQHAGPPSTSRPRPMDTFCPPVYATKHFLYSSGDKEQ 295
:|||||

Qy 341 LRPSFLSSLRPSLTGARRLVETIFLGRSPWMPGTPRRRLPRLPQRYWQMPFLFLLGNH 400
:|||||
Db 296 LRPSFLSSLRPSLTGARRLVETIFLGRSPWMPGTPRRRLPRLPQRYWQMPFLFLLGNH 355
:|||||

Qy 401 AQCYPGYLLKTHCPRLRAAVTPAAGVCAREKPGQSVAAPEEEDTPRRLVQLLRQHSPPWQ 460
:|||||
Db 356 AQCYPGYLLKTHCPRLRAAVTPAAGVCAREKPGQSVAAPEEEDTPRRLVQLLRQHSPPWQ 415
:|||||

Qy 461 VYGFVRACLRLRPPGLWGRHNRRLRNTKKFISLGKHAKLSQLBELTWKMSVRDCAWL 520
:|||||
Db 416 VYGFVRACLRLRPPGLWGRHNRRLRNTKKFISLGKHAKLSQLBELTWKMSVRDCAWL 475
:|||||

Qy 521 RRSFGVGCVPAAEHRRLREELAKFLHMLSVYVVVELLS 559
:|||||
Db 476 RRSFGVGCVPAAEHRRLREELAKFLHMLSVYVVVELLS 514
:|||||

RESULT 75

AAO29774

ID AAO29774 standard; protein; 291 AA.

XX

AC AAO29774;

XX

DT 27-AUG-2003 (first entry)

XX

DE hTERT MHC restricted epitope from clone 8.

XX

KW Human; telomerase reverse transcriptase; MHC; tumour-associated antigen;
KW hyperproliferative disease; major histocompatibility complex; hTERT; TAA;
KW immune-mediated disease; systemic lupus erythematosus; protein therapy;
KW Grave's disease; multiple sclerosis; atherosclerosis; cancer; diabetes;
KW Crohn's disease; gene therapy; arthritis; epitope; vaccine; vasculitis;
KW cell therapy.

XX

OS Homo sapiens.

XX

FH Key Location/Qualifiers

FT Region 34..48

FT Region /note= "MHC-II restricted epitope fragment"

FT Region 133..147

FT Region /note= "MHC-II restricted epitope fragment"

FT Region 227..241

FT Region /note= "MHC-II restricted epitope fragment"

XX

FN W02003038047-A2.

XX

PD 08-MAY-2003.

XX

PF 29-OCT-2002; 2002WO-US034588.

XX

PR 29-OCT-2001; 2001US-0345012P.

XX

(BAYU) BAYLOR COLLEGE MEDICINE.

XX

PI Chen S, Zhaoyang Y, Schroers R;

XX

WPI; 2003-430511/40.

XX

N-PSDB; AAL60416.

XX

New human telomerase reverse transcriptase tumor-associated MHC-I or MHC-II restricted polynucleotides and antigens, useful for treating cancers (e.g. lung or bone cancer or lymphomas), Crohn's disease or multiple sclerosis.

XX

Claim 3; Fig 2C; 143pp; English.

XX

The invention relates to human telomerase reverse transcriptase (hTERT) major histocompatibility complex (MHC)-I or MHC-II restricted tumour-associated antigens (TAA) and polynucleotides encoding such proteins. The invention is useful for treating hyperproliferative diseases such as cancer (e.g. lung cancer, head and neck cancer, pancreatic cancer, breast cancer, prostate cancer, renal cancer, bone cancer, testicular cancer, cervical cancer, gastrointestinal cancer, lymphomas, colon cancer, pre-neoplastic lesions in the lung, melanoma or bladder cancer) or immune-mediated diseases which include arthritis, Crohn's disease, vasculitis, Crohn's disease, multiple sclerosis, atherosclerosis, diabetes, systemic

CC lupus erythematosus etc. The invention is used in gene therapy, protein
CC therapy, cell therapy and also in the preparation of vaccines. The
CC present sequence is hTERT MHC class I and II restricted epitope
XX
SQ Sequence 291 AA;

Query Match 25.0%; Score 1490; DB 6; Length 291;
Best Local Similarity 100.0%; Pred. No. 1.5e-116; Indels 0; Gaps 0;
Matches 291; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 540 ILAKELHLMMSVYVVELLSRPYVTTTFQKNRLFYFKSVMSKLSQSIGIRHKLKRVQLR 599
Db 1 ILAKELHLMMSVYVVELLSRPYVTTTFQKNRLFYFKSVMSKLSQSIGIRHKLKRVQLR 60
QY 600 ELSEAEVRQREARPAALLTSRLRFIPKPDGLRPINMDYVVGARTFRREKRAERLTSRVK 659
Db 61 ELSEAEVRQREARPAALLTSRLRFIPKPDGLRPINMDYVVGARTFRREKRAERLTSRVK 120
QY 660 ALFVSUNYERARRPGLLGASVGLDDIHRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDT 719
Db 121 ALFVSUNYERARRPGLLGASVGLDDIHRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDT 180
QY 720 IPQDRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAH 779
Db 181 IPQDRLTEVIASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAH 240
QY 780 LOETSPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQG 830
Db 241 LOETSPLRDVAVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQG 291

RESULT 76
AA43128
ID AAY43128 standard; protein; 283 AA.
AC AAY43128;
DT 20-DEC-1999 (first entry)
XX Human telomerase reverse transcriptase.
DE Human telomerase reverse transcriptase.
KW Human telomerase reverse transcriptase; hTERT; antibody; diagnosis;
KW telomerase-related disease; cancer.
XX Homo sapiens.
OS Homo sapiens.
XX WO9950407-A1.
PN 07-OCT-1999.
XX 26-MAR-1999; 99WO-JP001557.
PF 26-MAR-1998; 98JP-00098486.
PR (KYOW) KYOWA HAKKO KOGYO KK.
XX Hanai N, Yamaseaki M, Shibata K, Furuwa A, Mikuni O, Anazawa H;
XX WPI; 1999-591316/50.
XX New monoclonal antibody recognizing human telomerase catalytic subunit
PT (hTERT) useful for treating and diagnosing cancer.
XX Claim 2; Page 72-73; 78pp; Japanese.
XX This sequence represents the human telomerase reverse transcriptase
CC (hTERT). The invention relates to a monoclonal antibody recognizing the
CC hTERT. The antibody can be used for the investigation, diagnosis and
CC treatment of telomerase-related diseases, especially diseases in which
CC telomerase expression is up-regulated e.g. cancers
XX
SQ Sequence 283 AA;

Query Match 24.2%; Score 1444; DB 2; Length 283;
Best Local Similarity 100.0%; Pred. No. 1.1e-112;
Matches 283; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 549 MSVYVVELLSRPYVTTTFQKNRLFYFKSVMSKLSQSIGIRHKLKRVQLRSEAEVRQ 608
Db 1 MSVYVVELLSRPYVTTTFQKNRLFYFKSVMSKLSQSIGIRHKLKRVQLRSEAEVRQ 60
QY 609 HREARPAALLTSRLRFIPKPDGLRPINMDYVVGARTFRREKRAERLTSRVKALFVNLVE 668
Db 61 HREARPAALLTSRLRFIPKPDGLRPINMDYVVGARTFRREKRAERLTSRVKALFVNLVE 120
QY 669 RARRPGLLGASVGLDDIHRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 728
Db 121 RARRPGLLGASVGLDDIHRAWRTFVLRVRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 180
QY 729 IASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHLOETSPLRD 788
Db 181 IASIIKPONTYCVRRYAVVQKAAHGHVRKAFKSHVSTLTDLPYMRQFVAHLOETSPLRD 240
QY 789 AVVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQG 831
Db 241 AVVIEQSSSLNEASSGLFDVFLRFMCHHAVIRGKSYVQCQG 283

RESULT 77
AA47002
ID AAW47002 standard; protein; 531 AA.
XX AAW47002;
XX 13-AUG-1998 (first entry)
DE Glutathione-S-transferase and hTERT fusion protein 2.
KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX Synthetic.
OS Homo sapiens.
XX Key
FH Region Location/Qualifiers
FT 1.221
FT Region /note= "glutathione-S-transferase fragment"
FT 249..531
FT /note= "hTERT protein fragment"
XX GB2317891-A.
XX 08-APR-1998.
XX 01-OCT-1997; 97GB-00020890.
XX 01-OCT-1996; 96US-00724643.
PR 18-APR-1997; 97US-00844419.
PR 25-APR-1997; 97US-00846017.
PR 06-MAY-1997; 97US-00851843.
PR 09-MAY-1997; 97US-00854050.
PR 14-AUG-1997; 97US-00911312.
PR 14-AUG-1997; 97US-00912951.
PR 14-AUG-1997; 97US-00915503.
XX (GERO-) GERON CORP.
XX (UYTE-) UNIV TECHNOLOGY CORP.
XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;
XX WPI; 1998-171633/16.
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.

XX PS Example 6; Page 225; 387pp; English.

XX CC The present sequence represents a fusion protein from an example of the

CC present invention which describes human telomerase reverse transcriptase

CC (hTERT). The present invention also describes the following methods: (A)

CC determining whether a test compound is a modulator of hTERT, by detecting

CC the change in hTERT recombinant protein or polynucleotide, on

CC administration of the compound; (B) preparation of recombinant telomerase

CC by contacting a protein preparation of hTERT with a telomerase RNA

CC component; (C) detection of the hTERT RNA or protein in a sample by

CC binding a relevant probe to the sample and detecting the complex formed

CC or in the case of RNA detection, amplifying the product and correlating

CC the presence of complex or amplification product with presence of hTERT in

CC the sample; and (D) increasing the proliferation of a vertebrate cell by

CC increasing hTERT expression; and (E) the use of an agent that causes an

CC increase in cell vertebrate cell proliferation to create a medicament

CC that inhibits ageing. A protein preparation of hTERT and the

CC polynucleotide encoding hTERT can be used in the manufacture of

CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of

CC telomerase activity can be used to treat conditions that are associated

CC with high telomerase activity. A protein preparation of hTERT can also be

CC used in the new methods

XX CC Sequence 531 AA;

Query Match 24.1%; Score 1439; DB 2; Length 531;

Best Local Similarity 92.6%; Pred. No. 6.9e-112;

Matches 287; Conservative 1; Mismatches 16; Indels 6; Gaps 1;

QY 522 RSPGVGCVPAEHLRREIIIAKFLHLMMSVVVELLSFFYVTTTQKNRLFYRKSVW 581

DB 228 RRASVGSVHHHHHHHGSVTK-----MSVVVELLSFFYVTTTQKNRLFYRKSVW 281

QY 582 SKLQSIGIROLKXVQLRELSAEVROHREARPAALLTSRLRFKPKDGLPIVNM DYVG 641

DB 282 SKLQSIGIROLKXVQLRELSAEVROHREARPAALLTSRLRFKPKDGLPIVNM DYVG 341

QY 642 ARTFRREKRAELTISRKALFVSNLYERARRPGLLGASVLGLDDIHRAWTFVLRVRAQD 701

DB 342 ARTFRREKRAELTISRKALFVSNLYERARRPGLLGASVLGLDDIHRAWTFVLRVRAQD 401

QY 702 PPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKS 761

DB 402 PPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKPQNTYCVRRYAVVQKAAGHVRKAFKS 461

QY 762 HVSTLTDLQPMYRQFVAHLQETSPLRDANVIEQSSLSNEASSGLFDVFLRFMCHAVRIR 821

DB 462 HVSTLTDLQPMYRQFVAHLQETSPLRDANVIEQSSLSNEASSGLFDVFLRFMCHAVRIR 521

QY 822 GKSYVQCQGI 831

DB 522 GKSYVQCQGI 531

RESULT 78

AAW47005

ID AAW47005 standard; protein; 516 AA.

XX AC AAW47005;

XX 13-AUG-1998 (first entry)

XX DE Glutathione-S-transferase and hTERT fusion protein 5.

XX KW Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;

XX KW cell proliferation; cancer; ageing; ribonucleoprotein.

XX OS Synthetic.

XX OS Homo sapiens.

XX FH Key

XX Region 1. .220

FT FT /note= "glutathione-S-transferase fragment"

FT FT 237. .516

XX /note= "hTERT protein fragment"

XX GB2317891-A.

XX 08-APR-1998.

XX 01-OCT-1997; 97GB-00020890.

XX 01-OCT-1996; 96US-00724643.

XX 25-APR-1997; 97US-00844419.

XX 05-MAY-1997; 97US-00851843.

XX 09-MAY-1997; 97US-00854050.

XX 14-AUG-1997; 97US-00911312.

XX 14-AUG-1997; 97US-00912951.

XX 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.

XX (UYTB-) UNIV TECHNOLOGY CORP.

XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;

XX Andrews WH;

XX WPI; 1998-171633/16.

XX Pure and recombinant human Telomerase Reverse Transcriptase and its

XX variants - are useful in the diagnosis, prognosis and treatment of cell

XX proliferation conditions especially cancer and ageing.

XX Example 6; Page 227; 387pp; English.

XX The present sequence represents a fusion protein from an example of the

XX present invention which describes human telomerase reverse transcriptase

XX (hTERT). The present invention also describes the following methods: (A)

XX determining whether a test compound is a modulator of hTERT, by detecting

XX the change in hTERT recombinant protein or polynucleotide, on

XX administration of the compound; (B) preparation of recombinant telomerase

XX by contacting a protein preparation of hTERT with a telomerase RNA

XX component; (C) detection of the hTERT RNA or protein in a sample by

XX binding a relevant probe to the sample and detecting the complex formed

XX or in the case of RNA detection, amplifying the product and correlating

XX the presence of complex or amplification product with presence of hTERT in

XX the sample; and (D) increasing the proliferation of a vertebrate cell by

XX increasing hTERT expression; and (E) the use of an agent that causes an

XX increase in cell vertebrate cell proliferation to create a medicament

XX that inhibits ageing. A protein preparation of hTERT and the

XX polynucleotide encoding hTERT can be used in the manufacture of

XX medicaments for inhibiting the effect of ageing or cancer. Inhibitors of

XX telomerase activity can be used to treat conditions that are associated

XX with high telomerase activity. A protein preparation of hTERT can also be

XX used in the new methods

XX SQ Sequence 516 AA;

Query Match 23.8%; Score 1417.5; DB 2; Length 516;

Best Local Similarity 96.8%; Pred. No. 4.3e-110;

Matches 276; Conservative 2; Mismatches 2; Indels 5; Gaps 5;

QY 1 MPRAPRCRAVRSLRSHYREVLPPLATFVRRLGPGQWRVLVQRPDPAAFRALVAQCLVCPW 60

DB 237 MPRAPRCRAVRSLRSHYREVLPPLATFVRRLGPGQWRVLVQRPDPAAFRALVAQCLVCPW 295

QY 61 DARPPPAASFRQVSCLEKELVARVQLRCLERGAKNVLAFGFALLDGGAGPPPEAFTTSVR 120

DB 296 DAR-PPAASFRQVSCLEKELVARVQLRCLERGAKNVLAFGFALLDGGAGPPPEA-FTTSVR 353

QY 121 SYLPTNTVDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAPSCAYQCGPPLQLGA 180

DB 354 SYLPTNTVDALRGSGAWGLLRRVGGDVLVHLLARCALFVLVAP-CA YQCGPPLQLGA 412

QY 181 ATQARPPPHASGPRRLRGCEAWNHSVREAGVPLGLPAPGARRRRGGSASRSLPLPKRPR 240

Db 413 ATQARPPPPASGPRRLGRCERAMNHSVREAGVPLGLPAGARRRGSGSASRSLPILPERPR 472
QY 241 GAAPPERTPVGGSWAHPGTRGSDRGFCVVSAPAEATSL 285
Db 473 GAAPPERTPVGGSWAHPGTRGSDRGFC-WSPARPAEATSL 516

RESULT 79
AAW47003
ID AAW47003 standard; protein; 514 AA.
XX AAW47003;
XX
XX 13-AUG-1998 (first entry)
XX Glutathione-S-transferase and hTERT fusion protein 3.
XX Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
KW cell proliferation; cancer; ageing; ribonucleoprotein.
XX Synthetic.
OS Homo sapiens.
FH Key Location/Qualifiers
FT Region 1..220
FT /note= "glutathione-S-transferase fragment"
FT Region 238..514
FT /note= "hTERT protein fragment"
XX GB23117891-A.
XX
XX 08-APR-1998.
XX
XX 01-OCT-1997; 97GB-00020890.
XX
XX 01-OCT-1996; 96US-00724643.
XX 18-APR-1997; 97US-00844419.
XX 25-APR-1997; 97US-00846017.
XX 06-MAY-1997; 97US-00851843.
XX 09-MAY-1997; 97US-00854050.
XX 14-AUG-1997; 97US-00911312.
XX 14-AUG-1997; 97US-00912351.
XX 14-AUG-1997; 97US-00915503.
XX (GERO-) GERON CORP.
XX (UYTE-) UNIV TECHNOLOGY CORP.
XX
XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
XX Andrews WH;
XX WPI; 1998-171633/16.
XX
XX Pure and recombinant human Telomerase Reverse Transcriptase and its
XX variants - are useful in the diagnosis, prognosis and treatment of cell
XX proliferation conditions especially cancer and ageing.
XX
XX Example 6; Page 226; 387pp; English.

XX The present sequence represents a fusion protein from an example of the
XX present invention which describes human telomerase reverse transcriptase
XX (hTERT). The present invention also describes the following methods: (A)
XX determining whether a test compound is a modulator of hTERT, by detecting
XX the change in hTERT recombinant protein or polynucleotide, on
XX administration of the compound; (B) preparation of recombinant telomerase
XX by contacting a protein preparation of hTERT with a telomerase RNA
XX component; (C) detection of the hTERT RNA or protein in a sample by
XX binding a relevant probe to the sample and detecting the complex formed
XX or in the case of RNA detection, amplifying the product and correlating
XX the presence of complex or amplification product with presence of hTERT in
XX the sample; and (D) increasing the proliferation of a vertebrate cell by
XX increasing hTERT expression; and (E) the use of an agent that causes an
XX increase in cell vertebrate cell proliferation to create a medicament

CC that inhibits ageing. A protein preparation of hTERT and the
CC polynucleotide encoding hTERT can be used in the manufacture of
CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
CC telomerase activity can be used to treat conditions that are associated
CC with high telomerase activity. A protein preparation of hTERT can also be
CC used in the new methods
XX
SQ Sequence 514 AA;

Query Match 22.3%; Score 1330.5; DB 2; Length 514;
Best Local Similarity 81.2%; Pred No. 9e-103;
Matches 286; Conservative 8; Mismatches 35; Indels 23; Gaps 11;
QY 487 FLRNTKKFISLGHAKLSLQELTWKVSVRDCAWLR-----RSPGVGCVPAAEHRLREBI 540
Db 179 FKKRIEAIPOIDKYLK-SKSYIAWPLQ---GQATFGGDHPPKSDLVPPGSRASVGS 233
QY 541 LAKFLHMLMSVVVVELLSFFVVTETTFQKRLFFYRKSVMWSKLSIGIRQHLKRVQURE 600
Db 234 VTK-----MSVVVVELLSFFVVTETTFQKRLFFYRKSVMWSKLSIGIRQHLKRVQURE 288
QY 601 LSEAEVROH-REARPALITSRLRFPKPDGLRPINMDYVVGARTFREKRAERLTSRVK 659
Db 289 LSEA-VROHEREARPALITSRLRFPKPDGLRPINMDYVVGARTFREKRAERLTSR-K 346
QY 660 ALFSLVNYERARRPGLLGASVGLDDIHRWRTFVLVRADPPPELYFVKVDVTGAYDT 719
Db 347 ALFSLVNYERARRPGLLGASVGLDDIHRWRTFVLVRADPPPE-YFVKVDVTGAYDT 405
QY 720 IPQDLRTVEIASIIPQNTYCVRRYAVVQKAHGHVRKAFKSHVSTLTDLQPYMRQFVAH 779
Db 406 IPQDLRTVEIASIIPQNTYCVRRYA-WQKAHG-VRAKAFKSHVSTLTDLQPYMRQFVAH 463
QY 780 LQETSPLRDVAVVIEQSSSLNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQGI 831
Db 464 LQETSPLRDVAVVIEQSSSLNEA-SGLFDVFLRFMCHHAVRIRGKSYVQCQGI 514

RESULT 80
ADG85224
ID ADG85224 standard; protein; 250 AA.
XX
XX ADG85224;
XX
XX 11-MAR-2004 (first entry)
XX Human telomerase reverse transcriptase.
XX
XX telomerase catalytic activity;
KW hydrogen peroxide-induced cellular senescence; proliferative disease;
KW cancer; human; telomerase reverse transcriptase; enzyme.
XX
OS Homo sapiens.
XX
XX US2003225027-A1.
XX
XX 04-DEC-2003.
XX
XX 30-MAY-2003; 2003US-00449565.
XX
XX 31-MAY-2002; 2002US-0384806P.
XX
XX (HUAN/) HUANG J.
XX (HUAN/) HUANG C.
XX (LINM/) LIN M C M.
XX (KUNG/) KUNG H.

XX Huang JJ, Huang C, Lin MCM, Kung H;
XX WPI; 2004-089418/09.
XX N-PSDB; ADG85223.
XX
XX New human telomerase reverse transcriptase polypeptide, useful in

PT preparing a composition for treating or preventing proliferative disease,
XX e.g., cancer.

PS Claim 3; SEQ ID NO 2; 38pp; English.

XX The invention relates to a new polypeptide which lacks telomerase
CC catalytic activity or inhibitory effect on telomerase catalytic activity
CC in a cell and has the ability to sensitize HeLa cells to hydrogen
CC peroxide-induced cellular senescence. The polypeptide is useful in
CC preparing a composition for treating or preventing proliferative disease
CC e.g. cancer. The present sequence represents the amino acid sequence of
CC human telomerase reverse transcriptase.

XX Sequence 250 AA;

Query Match 21.7%; Score 1296; DB 8; Length 250;
Best Local Similarity 100.0%; Pred. No. 2.6e-100;
Matches 250; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 883 FLRLVGRVPEYGCNVNLRKTVNFPVDEALGTAFAVQMPAHGLFPWCGLLDDTRTLEV 942
DB 1 FLRLVGRVPEYGCNVNLRKTVNFPVDEALGTAFAVQMPAHGLFPWCGLLDDTRTLEV 60

QY 943 QSDYSSVARTSIRASLTFRNGFAGRNMRRLFGVLRKCHSLFDLQVNSLQTVCTNIY 1002
DB 61 QSDYSSVARTSIRASLTFRNGFAGRNMRRLFGVLRKCHSLFDLQVNSLQTVCTNIY 120

QY 1003 KILLQAYRFHACVLQLPFHQQVKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAA 1062
DB 121 KILLQAYRFHACVLQLPFHQQVKNPTFFLRVISTASLCYSILKAKNAGMSLGAKGAA 180

QY 1063 GLPSEAVQWLCHQAFLLKLRHRTVYVPLLSGLRTAQTLRSKLPQTTLTLEAAANPA 1122
DB 181 GLPSEAVQWLCHQAFLLKLRHRTVYVPLLSGLRTAQTLRSKLPQTTLTLEAAANPA 240

QY 1123 LPSDFKTLID 1132
DB 241 LPSDFKTLID 250

RESULT 81
AAW46998
ID AAW46998 standard; protein; 259 AA.

XX AAW46998;

XX 13-AUG-1998 (first entry)

XX Human telomerase reverse transcriptase protein from cDNA clone 712562.

XX Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
XX cell proliferation; cancer; ageing; ribonucleoprotein.

XX Homo sapiens.

XX GB2317891-A.

XX 08-APR-1998.

XX 01-OCT-1997; 97GB-00020890.

XX 01-OCT-1996; 96US-00724643.

XX 18-APR-1997; 97US-00844419.

XX 25-APR-1997; 97US-00846017.

XX 06-MAY-1997; 97US-00851843.

XX 09-MAY-1997; 97US-00854050.

XX 14-AUG-1997; 97US-00911312.

XX 14-AUG-1997; 97US-00912951.

XX 14-AUG-1997; 97US-00915503.

XX (GERO-) GERON CORP.

XX (UYTE-) UNIV TECHNOLOGY CORP.

PI Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
PI Andrews WH;

XX WPI; 1998-171633/16.

DR N-PSDB; AAV22379.

XX Pure and recombinant human Telomerase Reverse Transcriptase and its
PT variants - are useful in the diagnosis, prognosis and treatment of cell
PT proliferation conditions especially cancer and ageing.

XX Example 1; Fig 19; 387pp; English.

XX The present sequence represents a human telomerase reverse transcriptase
CC (hTERT) protein from a cDNA clone from the present invention. The present
CC invention also describes the following methods: (A) determining whether a
CC test compound is a modulator of hTERT, by detecting the change in hTERT
CC recombinant protein or polynucleotide, on administration of the compound;
CC (B) preparation of recombinant telomerase by contacting a protein
CC preparation of hTERT with a telomerase RNA component; (C) detection of the
CC hTERT RNA or protein in a sample by binding a relevant probe to the sample
CC and detecting the complex formed or in the case of RNA detection,
CC amplifying the product and correlating the presence of complex or
CC amplification product with presence of hTERT in the sample; and (D)
CC increasing the proliferation of a vertebrate cell by increasing hTERT
CC expression; and (E) the use of an agent that causes an increase in cell
CC vertebrate cell proliferation to create a medicament that inhibits
CC ageing. A protein preparation of hTERT and the polynucleotide encoding
CC hTERT can be used in the manufacture of medicaments for inhibiting the
CC effect of ageing or cancer. Inhibitors of telomerase activity can be used
CC to treat conditions that are associated with high telomerase activity. A
CC protein preparation of hTERT can also be used in the new methods

XX Sequence 259 AA;

Query Match 18.4%; Score 1096; DB 2; Length 259;
Best Local Similarity 100.0%; Pred. No. 1.9e-83;
Matches 215; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 549 MSVVVVELLSRFPYVTETTFQKNLFFYKSVMSKLSQIGIRQHLKRVQLRELSEAEVRQ 608
DB 1 MSVVVVELLSRFPYVTETTFQKNLFFYKSVMSKLSQIGIRQHLKRVQLRELSEAEVRQ 60

QY 609 HREARPALTSRLRFIPKPDGLRPVNMVYVVGARTFRREKRAERLTSRVKALFSLVNYE 668
DB 61 HREARPALTSRLRFIPKPDGLRPVNMVYVVGARTFRREKRAERLTSRVKALFSLVNYE 120

QY 669 RARRPGLLGASVLGLDDIHRARWTFVLRYRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 728
DB 121 RARRPGLLGASVLGLDDIHRARWTFVLRYRAQDPPPELYFVKVDVTGAYDTIPQDRLTEV 180

QY 729 IASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 763

DB 181 IASIIKPQNTYCVRRYAVVQKAAHGHVRKAFKSHV 215

RESULT 82

AAO29775

ID AAO29775 standard; protein; 174 AA.

XX AAO29775;

XX 27-AUG-2003 (first entry)

XX hTERT MHC restricted epitope from clone 35.

XX Human; telomerase reverse transcriptase; MHC; tumour-associated antigen;
XX hyperproliferative disease; major histocompatibility complex; hTERT; TAA;
XX immune-mediated disease; systemic lupus erythematosus; protein therapy;
XX Grave's disease; multiple sclerosis; atherosclerosis; cancer; diabetes;
XX Crohn's disease; gene therapy; arthritis; epitope; vaccine; vasculitis;
XX cell therapy.

XX Homo sapiens.

```
XX FH Key Location/Qualifiers
XX FT Region 50..64
XX FT /note= "MHC-II restricted epitope fragment"
XX FT Region 86..100
XX FT /note= "MHC-II restricted epitope fragment"
XX FT Misc-difference 173..174
XX FT /note= "Encoded by AAG"
XX FN WO2003038047-A2.
XX PD 08-MAY-2003.
XX PF 29-OCT-2002; 2002WO-US034588.
XX PR 29-OCT-2001; 2001US-0345012P.
XX PA (BAYU ) BAYLOR COLLEGE MEDICINE.
XX PI Chen S, ZhaoYang Y, Schroers R;
XX DR WPI; 2003-430511/40.
XX DR N-PSDB; AAL60417.
XX CC New human telomerase reverse transcriptase tumor-associated MHC-I or MHC-II
XX FT restricted polynucleotides and antigens, useful for treating cancers
XX FT (e.g. lung or bone cancer or lymphomas), Crohn's disease or multiple
XX FT sclerosis.
XX PS Claim 5; Fig 2C; 143pp; English.
XX CC The invention relates to human telomerase reverse transcriptase (hTERT)
XX CC major histocompatibility complex (MHC)-I and MHC-II restricted tumour-
XX CC associated antigens (TAA) and polynucleotides encoding such proteins. The
XX CC invention is useful for treating hyperproliferative diseases such as
XX CC cancer (e.g. lung cancer, head and neck cancer, pancreatic cancer, breast
XX CC cancer, prostate cancer, renal cancer, bone cancer, testicular cancer,
XX CC cervical cancer, gastrointestinal cancer, lymphomas, colon cancer, pre-
XX CC neoplastic lesions in the lung, melanoma or bladder cancer) or immune-
XX CC mediated diseases which include arthritis, Crohn's disease, vasculitis,
XX CC Grave's disease, multiple sclerosis, atherosclerosis, diabetes, systemic
XX CC lupus erythematosus etc. The invention is used in gene therapy, protein
XX CC therapy, cell therapy and also in the preparation of vaccines. The
XX CC present sequence is hTERT MHC class I and II restricted epitope
XX SQ Sequence 174 AA;
Query Match 15.2%; Score 905; DB 6; Length 174;
Best Local Similarity 100.0%; Pred. No. 1.3e-67;
Matches 174; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 831 IPOGSLITLCLSCYCDMENKLFAGIRRDGLLRVDDFLVTPHLTHAKTFLRLVRG 890
Db 1 IPOGSLITLCLSCYCDMENKLFAGIRRDGLLRVDDFLVTPHLTHAKTFLRLVRG 60
QY 891 VPEYGCVMNLRKTVNFPVEDEALGCTAFVQMPAHGLFPWCGLLDTRTLEVQSDYSVA 950
Db 61 VPEYGCVMNLRKTVNFPVEDEALGCTAFVQMPAHGLFPWCGLLDTRTLEVQSDYSVA 120
QY 951 RTSIRASLTPNRFKAGNMRRLKFGVLRKCHSLFLDLQVNSLQVCTNIYKI 1004
Db 121 RTSIRASLTPNRFKAGNMRRLKFGVLRKCHSLFLDLQVNSLQVCTNIYKI 174
RESULT 83
AAE00431
ID AAE00431 standard; protein; 379 AA.
AC AAE00431;
XX 19-JUN-2001 (first entry)
XX DE Consensus sequence of telomerase reverse transcriptase (TERT) protein.
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XX KW Telomerase reverse transcriptase; TERT; ever shorter telomere; EST;
XX KW therapy; stomach cancer; malaria; vaginal candidiasis.
XX OS Unidentified.
XX FH Key Location/Qualifiers
XX FT Misc-difference 1 /label= Unknown
XX FT Misc-difference 5 /label= Unknown
XX FT Misc-difference 6 /label= Unknown
XX FT Misc-difference 7 /label= Unknown
XX FT Misc-difference 11 /label= Unknown
XX FT Misc-difference 13 /label= Unknown
XX FT Misc-difference 14 /label= Unknown
XX FT Misc-difference 19 /label= Unknown
XX FT Misc-difference 21 /label= Unknown
XX FT Misc-difference 22 /label= Unknown
XX FT Misc-difference 23 /label= Unknown
XX FT Misc-difference 26 /label= Unknown
XX FT Misc-difference 31 /label= Unknown
XX FT Misc-difference 34 /label= Unknown
XX FT Misc-difference 39 /label= Unknown
XX FT Misc-difference 40 /label= Unknown
XX FT Misc-difference 44 /label= Unknown
XX FT Misc-difference 61 /label= Unknown
XX FT Misc-difference 65 /label= Unknown
XX FT Misc-difference 73 /label= Unknown
XX FT Misc-difference 79 /label= Unknown
XX FT Misc-difference 91 /label= Unknown
XX FT Misc-difference 95 /label= Unknown
XX FT Misc-difference 108 /label= Unknown
XX FT Misc-difference 109 /label= Unknown
XX FT Misc-difference 110 /label= Unknown
XX FT Misc-difference 111 /label= Unknown
XX FT Misc-difference 112 /label= Unknown
XX FT Misc-difference 121 /label= Unknown
XX FT Misc-difference 122 /label= Unknown
XX FT Misc-difference 124 /label= Unknown
XX FT Misc-difference 127 /label= Unknown
XX FT Misc-difference 130 /label= Unknown
XX FT Misc-difference 130 /label= Unknown
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FT Misc-difference 131 /label= Unknown
FT Misc-difference 133 /label= Unknown
FT Misc-difference 135 /label= Unknown
FT Misc-difference 146 /label= Unknown
FT Misc-difference 156 /label= Unknown
FT Misc-difference 158 /label= Unknown
FT Misc-difference 166 /label= Unknown
FT Misc-difference 171 /label= Unknown
FT Misc-difference 173 /label= Unknown
FT Misc-difference 176 /label= Unknown
FT Misc-difference 179 /label= Unknown
FT Misc-difference 182 /label= Unknown
FT Misc-difference 185 /label= Unknown
FT Misc-difference 188 /label= Unknown
FT Misc-difference 195 /label= Unknown
FT Misc-difference 196 /label= Unknown
FT Misc-difference 197 /label= Unknown
FT Misc-difference 198 /label= Unknown
FT Misc-difference 199 /label= Unknown
FT Misc-difference 200 /label= Unknown
FT Misc-difference 201 /label= Unknown
FT Misc-difference 204 /label= Unknown
FT Misc-difference 207 /label= Unknown
FT Misc-difference 208 /label= Unknown
FT Misc-difference 209 /label= Unknown
FT Misc-difference 217 /label= Unknown
FT Misc-difference 218 /label= Unknown
FT Misc-difference 221 /label= Unknown
FT Misc-difference 225 /label= Unknown
FT Misc-difference 237 /label= Unknown
FT Misc-difference 243 /label= Unknown
FT Misc-difference 253 /label= Unknown
FT Misc-difference 254 /label= Unknown
FT Misc-difference 257 /label= Unknown
FT Misc-difference 258 /label= Unknown
FT Misc-difference 260 /label= Unknown
FT Misc-difference 263 /label= Unknown

FT Misc-difference 272 /label= Unknown
FT Misc-difference 273 /label= Unknown
FT Misc-difference 277 /label= Unknown
FT Misc-difference 300 /label= Unknown
FT Misc-difference 304 /label= Unknown
FT Misc-difference 311 /label= Unknown
FT Misc-difference 325 /label= Unknown
FT Misc-difference 326 /label= Unknown
FT Misc-difference 327 /label= Unknown
FT Misc-difference 332 /label= Unknown
FT Misc-difference 335 /label= Unknown
FT Misc-difference 340 /label= Unknown
FT Misc-difference 342 /label= Unknown
FT Misc-difference 343 /label= Unknown
FT Misc-difference 344 /label= Unknown
FT Misc-difference 352 /label= Unknown
FT Misc-difference 361 /label= Unknown
FT Misc-difference 362 /label= Unknown
FT Misc-difference 364 /label= Unknown
FT Misc-difference 367 /label= Unknown
XX WO200127287-A2.
PN
XX
PD
XX
PF 10-OCT-2000; 2000WO-US027825.

Query Match 12.0%; Score 713; DB 4; Length 379;
Best Local Similarity 39.3%; Pred. NO. 5.8e-51;
Matches 194; Conservative 31; Mismatches 137; Indels 132; Gaps 13;
Qy 451 LLQHSHPQVYGFVACLRRLVPPGLWGSRRNRRFLNTKXFIISGKXAKLSLOELTW 510
Db 15 LLSYXSXXXQVNFRLXILKLVPPXXLWXGRHKKIFLXNLKKFL-LXKYEXLSLOELMX 73
Qy 511 KMSVRDCAWLRRSPGVCVPAEHRLEILAKFLHWSVYVVELLRSPFYTTETTFQK 570
Db 74 KIKVR-----XILAKFLWLDXLVVLLRSPFYTTETTFXX 110
Qy 571 NRLFYRKSVMSKLSQIGIROHLKRVOLRELSAEVROHREARPALLTSLRFPKP-DG 629
Db 111 XXLFYRK-IWXXLXRIFFIXLXK-XLRELQEKVR-----XGKLRLLPKKXTX 158
Qy 630 LRPVNMVYVGARTFRREKRAERLSRVKALPSVLYNERARRPGLLGASVLGLDDIHRA 689
Db 159 FRPVMNKRKVVXKXKQMTXNQL---VXTLXNLKXKXXXXXXXLXGSVXXXDDIMRR 215
Qy 690 WRTFVLVRQAQPPPELYFVKVDVTGAYDTIPQDLTEVIASIIKQNTYCVRRYAVQK 749
Db 216 WXXFVXKRX-----PKLYFVKVDIKCYDTITXQDLVRVLKXKIK----- 256
Qy 750 AAHGHVRKAFKSHVSTLTDLPYMRQFVAHLQETSLRDAVVTIEQSSSLNEASSGLPDMV 809

Db 257 -----XEXSLXRDSVVIQX----- 272
QY 810 LRFMCHAVIRGKSYVOCQIGPOGSSILSTILCSLCYGDMEKLFAG-IRRDGILLRLVD 868
Db 273 -----XYKXKGIPOGSSILSTILCSLYYGDLEEXEYXQFLRRDXLLRLVD 318
QY 869 DFLLVTPHLTHAKTFLRLVR-GVPEYGCVVNLRKTVVNFVEDEALGGTAFVOMPAGHL 927
Db 319 DFLLLITXXXNNAKFLXLLVRXGXXYGFKNLXKTVVNF-----QMXHXL 365
QY 928 FPGCGLLDRTLE 941
Db 366 MXWIGLSIDIRTLE 379

RESULT 84
ABB99681 ID ABB99681 standard; protein; 174 AA.
XX AC ABB99681;
XX DT 28-MAR-2003 (first entry)
XX DE Splice variant of a human telomerase reverse transcriptase fragment.
XX KW Human; telomerase reverse transcriptase; hTERT; T cell response; vaccine;
XX KW cancer.
XX OS Homo sapiens.
XX FN WO200294312-A1.
XX PD 28-NOV-2002.
XX PF 16-MAY-2002; 2002WO-NO000176.
XX PR 21-MAY-2001; 2001GB-00012342.
XX PA (GEMV-) GEMVAX AS.
XX PI Eriksen JA, Gaudernack G, Moller M, Saeboe-Larsen S;
XX DR WPI; 2003-129380/12.
XX CC New polypeptides derived from human telomerase reverse transcriptase,
PT useful in preparing a medicament for treating or preventing cancer, or in
PT preparing a diagnostic for diagnosing cancer, e.g. breast cancer or
PT prostate cancer.

XX PS Disclosure; Fig 2; 56pp; English.
XX CC The present sequence represents a splice variant of a fragment of human
XX CC telomerase reverse transcriptase (hTERT). The specification describes
XX CC peptides derived from hTERT, which are capable of inducing a T cell
XX CC response and are used in medicine. The hTERT peptides and nucleic acids
XX CC encoding them are useful in preparing a medicament, which is a vaccine,
XX CC an antisense molecule, or is capable of generating an antisense molecule
XX CC in vivo, for treating cancer, or in preparing a diagnostic for diagnosing
XX CC cancer. The cancer is, for example, lung cancer, prostate cancer,
XX CC pancreatic cancer, colo-rectal cancer, breast cancer, malignant melanoma,
XX CC leukemia, lymphoma, ovarian cancer, cervical cancer, or a biliary tract
XX CC carcinoma
XX SQ Sequence 174 AA;
Query Match 11.2%; Score 667; DB 6; Length 174;
Best Local Similarity 100.0%; Pred. NO. 1.4e-47;
Matches 130; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 634 VNMDYVVGARTFRREKRAERLTSRVKALFSLVNYERARPGILGASVLGLDDIHRWRTF 693
Db 1 VNMDYVVGARTFRREKRAERLTSRVKALFSLVNYERARPGILGASVLGLDDIHRWRTF 60

QY 694 VLVRVRAQDPPELYFKVDVDTGAYDTIPQDRLTEVIASIIKQNTYCVRRYAVVQKAHAG 753
Db 61 VLVRVRAQDPPELYFKVDVDTGAYDTIPQDRLTEVIASIIKQNTYCVRRYAVVQKAHAG 120
QY 754 HVRKAFKSHV 763
Db 121 HVRKAFKSHV 130

RESULT 85
AAW97385 ID AAW97385 standard; protein; 131 AA.
XX AC AAW97385;
XX DT 14-MAY-1999 (first entry)
XX DE Amino acid sequence of the specification.
XX KW Catalytic telomerase; diagnosis; disease; telomerase activity.
XX OS Homo sapiens.
XX PN JP11046768-A.
XX PD 23-FEB-1999.
XX PF 01-AUG-1997; 97JP-00207708.
XX PR 01-AUG-1997; 97JP-00207708.
XX PA (MITU) MITSUBISHI CHEM CORP.
XX DR WPI; 1999-208111/18.
XX DR N-PSDB; AAX15924.
XX PT New catalytic protein of telomerase of a higher animal and a gene coding
PT it - useful for diagnosis of diseases caused by the change in activity of
PT a telomerase.

XX PS Example 1; Page 14; 18pp; Japanese.
XX CC The specification describes a human catalytic telomerase protein. The
XX CC products are useful in drug compositions for the diagnosis of diseases
XX CC caused by the change in activity of telomerase. The present sequence
XX CC appears in the specification
XX SQ Sequence 131 AA;
Query Match 10.9%; Score 651; DB 2; Length 131;
Best Local Similarity 98.5%; Pred. No. 2.1e-46;
Matches 128; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 542 AKFLHMLMSVVVVELLSRFFVVTTFQKNLFFVRKSVWSKLOSIGIROHLKRVQLREL 601
Db 1 AKFLHMLMSVVVVELLSRFFVVTTFQKNLFFVRKSVWSKLOSIGIROHLKRVQLRDV 60
QY 602 SEAEVRQHREARPAALLTSRLRFIPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKAL 661
Db 61 SEAEVRQHREARPAALLTSRLRFIPKPDGLRPIVNDYVVGARTFRREKRAERLTSRVKAL 120
QY 662 FSVLNYERAR 671
Db 121 FSVLNYERAR 130

RESULT 86
AAW56107 ID AAW56107 standard; protein; 988 AA.
XX AC AAW56107;
XX XX

DT 13-AUG-1998 (first entry)
 XX S. pombe trt protein sequence designated tezl.
 DE Human; telomerase reverse transcriptase; hTERT; TRT; diagnosis; prognosis;
 KW cell proliferation; cancer; ageing; ribonucleoprotein.
 KW Schizosaccharomyces pombe.
 OS
 XX GB2317891-A.
 XX 08-APR-1998.
 XX 01-OCT-1997; 97GB-00020890.
 XX 01-OCT-1996; 96US-00724643.
 PR 18-APR-1997; 97US-00844419.
 PR 23-APR-1997; 97US-00846017.
 PR 06-MAY-1997; 97US-00851843.
 PR 09-MAY-1997; 97US-00854050.
 PR 14-AUG-1997; 97US-00911312.
 PR 14-AUG-1997; 97US-00912951.
 PR 14-AUG-1997; 97US-00915503.
 XX (GERO-) GERON CORP.
 PA (UYTE-) UNIV TECHNOLOGY CORP.
 XX Cech TR, Lingner J, Nakamura T, Chapman KB, Morin GB, Harley CB;
 PI Andrews WH;
 XX WPI; 1998-171633/16.
 DR N-PSDB; AAV22423.
 XX Pure and recombinant human Telomerase Reverse Transcriptase and its
 PT variants - are useful in the diagnosis, prognosis and treatment of cell
 PT proliferation conditions especially cancer and ageing.
 XX Example 1; Fig 51; 387pp; English.
 XX The present sequence is Schizosaccharomyces pombe trt designated tezl
 CC from the present invention. The present invention also describes the
 CC following methods: (A) determining whether a test compound is a modulator
 CC of hTERT, by detecting the change in hTERT recombinant protein or
 CC polynucleotide, on administration of the compound; (B) preparation of
 CC recombinant telomerase by contacting a protein preparation of hTERT with a
 CC telomerase RNA component; (C) detection of the hTERT RNA or protein in a
 CC sample by binding a relevant probe to the sample and detecting the
 CC complex formed or in the case of RNA detection, amplifying the product
 CC and correlating the presence of complex or amplification product with
 CC presence of hTERT in the sample; and (D) increasing the proliferation of a
 CC vertebrate cell by increasing hTERT expression; and (E) the use of an
 CC agent that causes an increase in cell vertebrate cell proliferation to
 CC create a polynucleotide that inhibits ageing. A protein preparation of hTERT
 CC and the polynucleotide encoding hTERT can be used in the manufacture of
 CC medicaments for inhibiting the effect of ageing or cancer. Inhibitors of
 CC telomerase activity can be used to treat conditions that are associated
 CC with high telomerase activity. A protein preparation of hTERT can also be
 CC used in the new methods
 XX Sequence 988 AA;
 SQ
 Query Match 10.0%; Score 594; DB 2; Length 988;
 Best Local Similarity 22.3%; Pred. No. 2.3e-40;
 Matches 238; Conservative 202; Mismatches 379; Indels 248; Gaps 42;
 QY 5 PRCRAVRLSLRSHRYEVLPLATFVRRLGPGQWRVLVQRGDPAAFRALVAQCL----- 55
 DB 7 PKSRILR-FLENQVYVLTLDYV-----QLVLRGSPASSYNSICERLSRDVQTSFS 57
 QY 56 -----VCVPWDARPPAPFRQVSLK-ELVARVLQRLCERG---AKNVLAFGFAL-LD 105
 DB 58 IFLHSTVVGFDSPKDEGV-QFSSPKCQCSSELIANVVKQMFDEFFERRRNLMMKGFSMNHE 116

QY 106 GARGGPEAFTTSVRVSYLNTVDALRGSGAWGLLRRVGDVVLVHLARCALFVLVAPS 165
 DB 117 DFRAMHVGQNDLVSTFPNYSILE-SKNWQLLEIIIGSDAMHYLLSGSIFEALPND 175
 QY 166 CAYOVCGPPLYQLGAATQARPPPHASGPRRLCERAWHSHVREAGVPLGLPAGARRG 225
 DB 176 NYLQISGILPKF-----NNVFEETV-----SKRK 200
 QY 226 GSASRSLPLPKRPRRGAAPEPTPVQGSWAHPGRTRGSDRGFCVVSPPARPAEATSL 285
 DB 201 RTIETSIQNKSAK-----EVSW----- 219
 QY 286 EGALSGTRHS--HPSVGRQHHAGPSTSRPRPMDTPCPPVYAEKHF-LYSGDKBQLR 342
 DB 220 -NSISISRSFISFYRSSYK-----FKQDLYFNLSICDRNTVH 256
 QY 343 PSFLLSSLRPSLTG-----ARLVETIFLGSRPMPGTPRRL-----PRLPORYWQRPL 392
 DB 257 --MWLQWIFPRQGLINAFQVKQLHKVIFLVSSQTV--VPKRLKVVPLIEQAKRLHRI 312
 QY 393 FLELLGNHAQCPYGVLLKTHCPLRAAAVTPAAGVCAREKPGQSVAAPEEEDTDPRRLVQLL 452
 DB 313 SLSKVNH-YCPY---IDTH-----DDE-----KIL 334
 QY 453 QHSSPMQVYGVFVRACLRRLVPPGLWGRSHRERRFLRNTKKTIFSLGKHAKLQELTWKM 512
 DB 335 SYSCLKNQVFAFLRSILRVFPKLIWGNQRIPEIILKDLBTFKLKSYESFSLHYLSNI 394
 QY 513 SVRDCAWL---RRSPGVGCVPAAEHLRLBEILAKFLHLWLSVVVVELLRFYVTTTFQ 569
 DB 395 KISEIEMVLGKRSNAKMLC--SDFEKRQKQIFAEFYWLYNSFIITLQSPFFYITESDL 452
 QY 570 KNLFFYRKSWSKLSQSIGIRQHLKRVQLRELSEAEVRQHRARPALLTSLRFLPKPDG 629
 DB 453 RNRVTVFRKDIW-KLICRPFITSMKWEAFKINENVRMDTQ-KTLLPPAVIRLLPKNT 510
 QY 630 LRPIVNMVYVGARTFRREKRAERLTSRVKALFSVLNRYERARP-----GLLGASVLGL 683
 DB 511 FRLLITNL-----RKRFLIKMGSNKKMLVST---NOTLRPVASILKHLNEESSGI 557
 QY 684 D---DIHRAWRTF---VLVRAQDPPPELYFVKVDVTGAYDTIPODELTVIASIIPQN 737
 DB 558 PFNLEVYMKLLTTPKOLLKHRMFG--RKKYFVRIDIKSCYDRIKQDLMFRIVKKGKLDPE 615
 QY 738 TYCVRYAVYVQKAAGHVRKAFKSHVSTLTDLQPYMRQPFVAHLQETSPLRDADVIEQSS 797
 DB 616 -FVIRKATIH-ATSDRATKCNFVSEAFSPDMVFFEKVVOLLNMTS---DTLFDVFDY 670
 QY 798 LNEASSGLFDVFLRFMCHHAVRIRGKSYVQCQIPQSGISLTLCSLCYGDMMENKLPAGI 857
 DB 671 WTKSSSEIFQMLKEHLGSHIVKIGNSOYLQKVGIPQGSILSSFLCHFYMEDLIDEVLSFT 730
 QY 858 RRDG-LLRLVDDFLVTPHLTHAKTFLTRLVGRVPEYGCVNLKTVNFPVFEDEALGG 916
 DB 731 KTKGSLVLRVDDFLFITVNNKDAKFLNLSRGFKHNFSTSEKTVINFENSNGHINN 790
 QY 917 TAPVQMPAHGLFPMCGLLDTRTLEV-----QSDYSSYARTSIRASITFRNGFKAGNMR 971
 DB 791 TFFNESKKR--MPFFGFSVNMRSIDTLLACPKIDEALFNSTVELTKHMGSKF----- 841
 QY 972 RKLFGVLRLLKCHS---LFLDLQVNSLQTVCTNIYKI-----LLQLAY 1010
 DB 842 --FYKILRSSLASFAQVFDITHNSKFNSCCNIVRLGYSMCMRAQAY 886
 RESULT 87
 ADG70135
 ID ADG70135 standard; protein; 816 AA.
 XX ADG70135;
 AC ADG70135;
 XX 11-MAR-2004 (first entry)
 XX

DE HIV RT/hTERT chimeric construct #16.
XX
KW cytosolic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX
OS Chimeric.
OS Homo sapiens.
OS Human immunodeficiency virus 1.
PN WO2003095605-A2.
XX
PD 20-NOV-2003.
XX
PF 14-APR-2003; 2003WO-EP003874.
XX
PR 08-MAY-2002; 2002US-0378820P.
XX
PA (PHAA) PHARMACIA ITAL SPA.
PI Moll J, Schnuchel A, Stouten P;
XX
DR WPI; 2004-012095/01.
XX
XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX
PS Claim 1; SEQ ID NO 25; 141pp; English.
XX
CC The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC chimeric HIV-RT/hTERT protein construct.
XX
SQ Sequence 816 AA;
Query Match 9.5%; Score 565; DB 8; Length 816;
Best Local Similarity 43.9%; Pred. No. 4.9e-38;
Matches 143; Conservative 14; Mismatches 33; Indels 136; Gaps 11;
QY 624 IPKPDGLRPVNDYVVGARTFRR-EKRAERLTSRVKALFVSLNYERARRPGLLGASVLG 682
Db 303 IDKPDGLRLKLV-----FRELKRTQDF----- 325
QY 683 LDDIHRARWTFVLVRRAQDPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKQNTYCVR 742
Db 326 -----WRTFVLVRRAQDPPELYFVKVDVTGAYDTIPWDE-----DPR 363
QY 743 RYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHQETSPLRDAVAVIEQSSSLNEAS 802
Db 364 KYT-----AF-----TIP-----SINET 377
QY 803 SGLFDVFLRFMCHAVIRKSVVQCGIPQG-----SILSTLLCSLCYGD MENKLPAGI 857
Db 378 PG-----IRY-----QYNVLPQGWKGSFAIFQSSMTKIL-----EPFKKQ 412
QY 858 RRDGLLLRLVDDELLVTPHLLTHAKTFLRTLVGRVPEYGCVNLRKTVNFRPVEDEALGTT 917
Db 413 NPDIILLRLVDDELLVTPHLLTHAKTFLRTLVGRVPEYGCVNLRKTVNFRPVEDEALGTT 472
QY 918 AFVQMPAHGLFPCWGLLLDTRTLEVQ 943
Db 473 AFVQMPAHGLFPCWGLLLDTRTLEVQ 498

RESULT 88
ADG70131
ID ADG70131 standard; protein; 586 AA.
XX
AC ADG70131;
XX
XX 11-MAR-2004 (first entry)
DT
XX
DE HIV RT/hTERT chimeric construct #12.
XX
KW cytosolic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX
OS Chimeric.
OS Homo sapiens.
OS Human immunodeficiency virus 1.
PN WO2003095605-A2.
XX
PD 20-NOV-2003.
XX
PF 14-APR-2003; 2003WO-EP003874.
XX
PR 08-MAY-2002; 2002US-0378820P.
XX
PA (PHAA) PHARMACIA ITAL SPA.
XX
PI Moll J, Schnuchel A, Stouten P;
XX
DR WPI; 2004-012095/01.
XX
XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX
PS Claim 1; SEQ ID NO 21; 141pp; English.
XX
CC The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC chimeric HIV-RT/hTERT protein construct.
XX
SQ Sequence 586 AA;
Query Match 9.3%; Score 555; DB 8; Length 586;
Best Local Similarity 43.6%; Pred. No. 2.1e-37;
Matches 142; Conservative 14; Mismatches 34; Indels 136; Gaps 11;
QY 624 IPKPDGLRPVNDYVVGARTFRR-EKRAERLTSRVKALFVSLNYERARRPGLLGASVLG 682
Db 73 IDKPDGLRLKLV-----FRELKRTQDF----- 95
QY 683 LDDIHRARWTFVLVRRAQDPPELYFVKVDVTGAYDTIPQDRLTEVIASIIKQNTYCVR 742
Db 96 -----WRTFVLVRRAQDPPELYFVKVDVTGAYDTIPWDE-----DPR 133
QY 743 RYAVVQKAAGHVRKAFKSHVSTLTDLPYMRQFVAHQETSPLRDAVAVIEQSSSLNEAS 802
Db 134 KYT-----AF-----TIP-----SINET 147
QY 803 SGLFDVFLRFMCHAVIRKSVVQCGIPQG-----SILSTLLCSLCYGD MENKLPAGI 857
Db 148 PG-----IRY-----QYNVLPQGWKGSFAIFQSSMTKIL-----EPFKKQ 182

QY 858 RDGGLRLVDDFLVTPHLTHAKTFLRTLVRGVEYGCVVNLKRTVNVFPVEDEALGGT 917
Db 183 NPDILLRLVDDFLVTPHLTHAKTFLRTLVRGVEYGCVVNLKRTVNVFPVEDEALGGT 242
QY 918 AFVQMPAHGLFPWCGLLDTRTLEVQ 943
Db 243 AFVQMPAHGLFPWCGLLDTRTLEVQ 268

RESULT 89
ADG70134
ID ADG70134 standard; protein; 803 AA.
XX AC ADG70134;
XX DT 11-MAR-2004 (first entry)
XX DE HIV RT/hTERT chimeric construct #15.
XX KW cytosatic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX OS Chimeric.
OS Homo sapiens.
OS Human immunodeficiency virus 1.
XX PN WO2003095605-A2.
XX PD 20-NOV-2003.
XX PF 14-APR-2003; 2003WO-EP003874.
XX PR 08-MAY-2002; 2002US-0378820P.
XX PA (PHAA) PHARMACIA ITAL SPA.
XX PI Moll J, Schnuchel A, Stouten P;
XX WPI; 2004-012095/01.
XX
XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX Claim 1; SEQ ID NO 24; 141pp; English.

XX The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC chimeric HIV-RT/hTERT protein construct.

XX SQ Sequence 803 AA;

Query Match 9.3%; Score 555; DB 8; Length 803;
Best Local Similarity 43.6%; Pred. No. 3.4e-37;
Matches 142; Conservative 14; Mismatches 34; Indels 136; Gaps 11;

QY 624 IPKPDGLRPIVNMDDVVGARTFRR-EKRAERLTSRVKALFSLVNLVYRARRPGLLGASVLG 682
Db 290 IDKPDGLRKLVD-----FRELNRKTQDF----- 312
QY 683 LDDIHRARVTLVLRVRAQDPPELYFVKVDVTGAYDTIPQDLRTEVIASIKPQNTYCVR 742
|||||

Db 313 -----WRTFVLVRVRAQDPPELYFVKVDVTGAYDTIPWDE-----DFR 350
QY 743 RYAVVQXAAHGHVRKAFKSHVSTLTDLQPYMRQFVAHLQETSPLRDAVVIQSSSLNEAS 802
Db 351 KYT-----AF-----TIP-----SINNET 364
QY 803 SGLFDVFLRFMCHHAVIRKGSVYVQCQIFQG-----SILSTLLCSLCYGDMEKNLFAGI 857
Db 365 PG-----IRY-----QYNVLPGWKGSIPAIFQSSMTKIL-----EPFKKQ 399
QY 858 RRDGLRLVDDFLVTPHLTHAKTFLRTLVRGVEYGCVVNLKRTVNVFPVEDEALGGT 917
Db 400 NPDILLRLVDDFLVTPHLTHAKTFLRTLVRGVEYGCVVNLKRTVNVFPVEDEALGGT 459
QY 918 AFVQMPAHGLFPWCGLLDTRTLEVQ 943
Db 460 AFVQMPAHGLFPWCGLLDTRTLEVQ 485

RESULT 90
ADG70133
ID ADG70133 standard; protein; 816 AA.
XX AC ADG70133;
XX DT 11-MAR-2004 (first entry)
XX DE HIV RT/hTERT chimeric construct #14.
XX KW cytosatic; gene therapy; reverse transcriptase-Inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.
XX OS Chimeric.
OS Homo sapiens.
OS Human immunodeficiency virus 1.
XX PN WO2003095605-A2.
XX PD 20-NOV-2003.
XX PF 14-APR-2003; 2003WO-EP003874.
XX PR 08-MAY-2002; 2002US-0378820P.
XX PA (PHAA) PHARMACIA ITAL SPA.
XX PI Moll J, Schnuchel A, Stouten P;
XX WPI; 2004-012095/01.
XX
XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.
XX Example 1; SEQ ID NO 23; 141pp; English.

XX The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC chimeric HIV-RT/hTERT protein construct.

XX SQ Sequence 816 AA;

Query Match 9.3%; Score 555; DB 8; Length 816;

CC and/or function (e.g. anti-cancer activity), or for screening methods in
CC drug development or drug screening procedures. The present sequence
CC represents a hTERT fragment with the 20 amino acid HLA epitope containing
CC polypeptide at its C-terminus
XX
SQ Sequence 100 AA;

Query Match 9.0%; Score 534; DB 5; Length 100;
Best Local Similarity 98.0%; Pred. No. 1e-36;
Matches 98; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 457 SPQVYGFVACLRRLVPPGLWGSRRNRRFLNTKKFISLGHAKLSLOELTWKSVRD 516
Db 1 SPQVYGFVACLRRLVPPGLWGSRRNRRFLNTKKFISLGHAKLSLOELTWKSVRG 60
QY 517 CAWLRSPGVGCVPAAEHRLREILAKFLHLMMSVYVEL 556
Db 61 CAWLRSPGVGCVPAAEHRLREILAKFLHLMMSVYVEL 100

RESULT 93
ABG71627
ID ABG71627 standard; protein; 100 AA.
XX
AC ABG71627;

XX 09-JAN-2003 (first entry)
DT
DE hTERT fragment with HLA containing polypeptide at its N-terminus.

XX Human; telomerase catalytic subunit; hTERT; human leukocyte antigen;
KW human telomerase reverse transcriptase; HLA epitope; cancer; HLA profile;
KW breast cancer; pancreatic cancer; colorectal cancer; lung cancer;
KW ovarian cancer; cervical cancer; malignant melanoma; leukaemia; lymphoma;
KW biliary tract carcinoma; anti-cancer; mutant; cytostatic;
KW HLA class I epitope; HLA class II epitope; mutin.

XX Homo sapiens.
OS Synthetic.
OS
XX WO200270679-A2.
XX
XX 12-SEP-2002.
XX
XX 19-FEB-2002; 2002WO-NO000069.
XX
XX 02-MAR-2001; 2001GB-00005238.
XX
XX (GEMV-) GEMVAX AS.
XX
XX Eriksen JA, Gaudernack G, Moller M;
XX
XX WPI; 2002-750459/81.
XX

XX New polypeptide with an additional C-terminal and/or N-terminal sequence,
PT useful for preparing anti-cancer vaccines.
PT
XX Disclosure; Fig 1; 62pp; English.

XX The present invention relates to a polypeptide comprising a 20 amino acid
CC sequence derived from human telomerase catalytic subunit (or human
CC telomerase reverse transcriptase, hTERT) amino acid residues 537-556, or
CC fragments thereof comprising at least 10 amino acids and at least two
CC human leukocyte antigen (HLA) class I or class II epitopes. The invention
CC also describes a polypeptide having the above 20 amino acid peptide
CC sequence as additional C- and/or N-terminal sequences on a fragment of
CC hTERT which is not more than 100 amino acids of hTERT. The polypeptides
CC of the invention are useful in a pharmaceutical composition or in a
CC vaccine for preventing or treating cancer in populations of individuals
CC having varying HLA profiles. The polypeptides are also useful in a
CC diagnostic kit for diagnosing cancers such as breast, pancreatic,
CC colorectal, lung, ovarian or cervical cancer, malignant melanoma,
CC leukaemia, lymphoma or biliary tract carcinoma. The polypeptides or

CC encoding polynucleotide sequences are useful for performing identity,
CC sequence homology and/or hybridisation studies, for predicting structure
CC and/or function (e.g. anti-cancer activity), or for screening methods in
CC drug development or drug screening procedures. The present sequence
CC represents a hTERT fragment with the 20 amino acid HLA epitope containing
CC polypeptide at its N-terminus
XX

Query Match 8.5%; Score 509; DB 5; Length 100;
Best Local Similarity 100.0%; Pred. No. 1.3e-34;
Matches 100; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 537 REEILAKFLHLMMSVYVELLSRFFVYVTTTFOKNRLFFYRKSVWSKLSIGIRQLKRV 596
Db 1 REEILAKFLHLMMSVYVELLSRFFVYVTTTFOKNRLFFYRKSVWSKLSIGIRQLKRV 60
QY 597 QLRLESAEVRQHREARPAALLTSRLRFIPKPDGLRPVNM 636
Db 61 QLRLESAEVRQHREARPAALLTSRLRFIPKPDGLRPVNM 100

RESULT 94
ADG70112
ID ADG70112 standard; protein; 576 AA.
XX
AC ADG70112;

XX 11-MAR-2004 (first entry)
DT
DE HIV-1 RT/hTERT chimera protein.
XX
XX Cytostatic; gene therapy; reverse transcriptase-inhibitor; HIV-1;
KW human telomerase reverse transcriptase; hTERT; chimeric; catalytic site;
KW unregulated cellular growth; cancer; tumor.

XX Chimeric.
OS Homo sapiens.
OS Human immunodeficiency virus 1.
XX
XX WO2003095605-A2.
XX
XX 20-NOV-2003.
XX
XX 14-APR-2003; 2003WO-BP003874.
XX
XX 08-MAY-2002; 2002US-0378820P.
XX
XX (PHAA) PHARMACIA ITAL SPA.
XX
XX Moll J, Schnuchel A, Stouten P;
XX
XX WPI; 2004-012095/01.
XX
XX N-PSDB; ADG70111.
XX

XX New HIV-1 Reverse Transcriptase and human Telomerase Reverse
PT Transcriptase proteins and nucleic acids, useful in gene therapy or for
PT treating or preventing unregulated cellular growth, e.g. cancer cell or
PT tumor growth.

XX Claim 1; SEQ ID NO 2; 141pp; English.

XX The invention relates to the isolation of compounds that bind and inhibit
CC the activity of HIV-1 reverse transcriptase (RT) or human telomerase
CC reverse transcriptase (hTERT). The method involves determining these
CC compounds using a HIV-1 RT/hTERT chimeric construct containing the
CC catalytic sites of each enzyme. The nucleic acid is useful for treating
CC or preventing unregulated cellular growth, including cancer cell and
CC tumor growth. It is also useful in gene therapy. Compounds that inhibit
CC telomerase activity can be used to treat cancer. The vectors of the
CC invention can be used to amplify DNA or RNA encoding HIV-RT/hTERT and/or
CC express DNA which encodes HIV-RT/hTERT. This sequence corresponds to a
CC chimeric HIV-RT/hTERT protein.

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